



# KURUKSHETRA

A JOURNAL ON RURAL DEVELOPMENT



## e-Governance

# Bridging the Digital Divide

Dr. Anil Kumar  
Ministry of Education

Technology is one of the greatest factors and the most efficient tool for social change and advancement in today's world. The world's population has witnessed significant advances in the last few years, and a wide range of public facilities and all essential services, social and political applications has been provided. The most effective factors that may promote the growth of the nation through development and progress are education and communication technologies. The young and literate population is equipped with the necessary knowledge to have successful work, to be doing several things for the benefit of their country and to be the backbone of the future, and hence that population has the opportunity to benefit from a country's progress. A public institution should make use of the advantages offered by digital technology. It is necessary to ensure that the population has the opportunity to use all parts of digital technology and to continuously upgrade their skills to meet the needs of the rapidly changing world. So a public institution is providing an all-encompassing program to bring to the digital revolution which will create a digitally integrated ecosystem to work with and a seamless digital network, with focus on building the necessary infrastructure.

**I**n the past few years, the digital divide has become a major concern of the government. The government is providing a number of facilities and services to bridge the digital divide. The government is providing a number of facilities and services to bridge the digital divide. The government is providing a number of facilities and services to bridge the digital divide.

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There are many reasons for the digital divide. One of the main reasons is the lack of infrastructure. Another reason is the lack of skills. The government is providing a number of facilities and services to bridge the digital divide. The government is providing a number of facilities and services to bridge the digital divide.



# Bridging the Digital Divide

Annual Report  
World Bank Group

Technology is one of the principal factors and the main enabler for social change and advancement in today's world. The term "digital gap" has emerged to denote a situation in the last few years when a wide range of public agencies, universities, national academies, social, and political institutions has been generated. The main objective here is to give priority and developing nations towards development and prosperity are information and communication technologies. The main work here has prepared the required skills necessary to engage in their livelihood work. This thing, we can bridge the digital divide prepare the wider skills for the welfare of the future, and ensure that everyone has the opportunity to prosper. While a primary concern is to build infrastructure that increases use of the advances offered by digital technology. This includes a variety of digital education programs, the use of technology in all levels of education, and a variety of community support. The last and secondary concern is to ensure that the use of technology in all levels of education is supported by appropriate funding, law, and regulation is necessary to bring to the digital divide which will create a digitally empowered society in coordination with a community-based network, with focus on bridging the digital divide.

**I**n the use of the most powerful, digitized and very accessible means of communication, implementing a government to improve its population and economic growth requires a significant challenge. The integration of technology-based communication and data-driven operations are two significant advantages of government in India. The Internet and mobile technology have made it possible to rapidly transfer large volumes of data, which is the foundation of system operations. The use of government services for transparency of all operational processes. Digitized services for the public is a significant benefit in contemporary society. These services are a result of different levels of work in social inclusion of all citizens in the use of digital services. Digital services, especially those that use technology, are becoming a key factor in the growth of the economy and the development of the country. The use of digital services, especially those that use technology, are becoming a key factor in the growth of the economy and the development of the country. The use of digital services, especially those that use technology, are becoming a key factor in the growth of the economy and the development of the country.

Some of the key factors are technology adoption in a digital landscape. Digital services are becoming a key factor in the growth of the economy and the development of the country. The use of digital services, especially those that use technology, are becoming a key factor in the growth of the economy and the development of the country. The use of digital services, especially those that use technology, are becoming a key factor in the growth of the economy and the development of the country.



local government, technological infrastructure, and collaborative systems that address economic inequality, and digital literacy. Quality connectivity capabilities are more important than ever, and the dependable infrastructure needed to ensure universal and uninterrupted access to the Internet is essential.

While all these factors are important, the most important one is the ability to build on these factors. The digital divide is not a static phenomenon, and it is not a one-time event. It is a dynamic phenomenon that evolves over time. The digital divide is not a static phenomenon, and it is not a one-time event. It is a dynamic phenomenon that evolves over time. The digital divide is not a static phenomenon, and it is not a one-time event. It is a dynamic phenomenon that evolves over time.

### Building Infrastructure to Overcome the Digital Divide

The primary role of public authorities is to ensure that all citizens have access to the Internet. This is not a simple task, as it involves a wide range of factors, including infrastructure, digital literacy, and economic inequality. Public authorities must take a holistic approach to address these issues. This involves investing in infrastructure, promoting digital literacy, and addressing economic inequality. Public authorities must take a holistic approach to address these issues. This involves investing in infrastructure, promoting digital literacy, and addressing economic inequality. Public authorities must take a holistic approach to address these issues.

Investment has been ramped up over the past few years and needs to be sustained. A national approach that focuses on the ability to build on these factors is essential. This involves investing in infrastructure, promoting digital literacy, and addressing economic inequality. Public authorities must take a holistic approach to address these issues. This involves investing in infrastructure, promoting digital literacy, and addressing economic inequality.

### Ensuring an Affordable, Inclusive Internet for All

The digital divide is a global issue that affects billions of people. It is not just a matter of access, but also of affordability and quality. Public authorities must take steps to ensure that the Internet is affordable and inclusive for all. This involves investing in infrastructure, promoting digital literacy, and addressing economic inequality. Public authorities must take a holistic approach to address these issues. This involves investing in infrastructure, promoting digital literacy, and addressing economic inequality.

- **Importance of Infrastructure:** In developing countries, infrastructure is often inadequate, which hinders economic growth and development. Governments and the private sector must collaborate to improve network quality and the availability of high-speed Internet. In contrast, developed countries need to focus on fiber optics and other technologies to enhance network performance and reliability, ensuring that all citizens have access to high-quality Internet services.
- **Monopoly:** The facilitation of economic and increased Internet access is a key goal, but the responsibility of governments is to ensure that regulatory frameworks are in place to prevent monopolies. The private sector has a role to play in this regard, as it can provide the infrastructure and services needed to support economic growth and development.

Noticed by previous knowledge. Community  
 4. Impact of Covid-19 pandemic has been a  
 significant contributor to the fast moving  
 global transition. WCO's focus on the  
 2020. However, just as waves of people  
 will pass and affect how business is done  
 across the world, the use of technology for  
 communication regarding these issues  
 should be equally important. Effective  
 risk reduction can be achieved. Most  
 of the important factors for risk reduction are  
 people, goods, services, and the use of  
 technology. These factors should be  
 addressed in the context of the global  
 transition. The use of technology for  
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 should be equally important. Effective  
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 of the important factors for risk reduction are  
 people, goods, services, and the use of  
 technology. These factors should be  
 addressed in the context of the global  
 transition.

**Digital Economy and Building Resilient Capacity**  
 Through WCO's focus on digital economy  
 and building resilient capacity, the world  
 is becoming more interconnected and  
 resilient. The use of technology for  
 communication regarding these issues  
 should be equally important. Effective  
 risk reduction can be achieved. Most  
 of the important factors for risk reduction are  
 people, goods, services, and the use of  
 technology. These factors should be  
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 transition.

Focus on the digital economy and building  
 resilient capacity. The use of technology for  
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 technology. These factors should be  
 addressed in the context of the global  
 transition.

Measuring levels of economic activity  
 using various tools and methods. This is  
 important to ensure that the global  
 transition is successful. The use of  
 technology for communication regarding  
 these issues should be equally important.

levels of economic activity. This is  
 important to ensure that the global  
 transition is successful. The use of  
 technology for communication regarding  
 these issues should be equally important.

**Government Development Index (GDI)**  
 Index is a benchmarking and development tool for  
 countries to learn from each other. It is a  
 set of metrics and indicators of government  
 and state that assess the strength of the state. The  
 last time GDI was used was in the 1990s.  
 It is a benchmarking and development tool for  
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 and state that assess the strength of the state.

Table 1

Year	GDI	LDX Composite Score
2010	107	1.1011
2011	107	1.2004
2012	107	1.3000
2013	107	1.4011
2014	107	1.5011

Source: Author's calculations using data from  
 WCO's GDI and LDX Composite Score

The government is implementing the  
 digital economy and building resilient capacity  
 through WCO's focus on digital economy  
 and building resilient capacity. The use of  
 technology for communication regarding  
 these issues should be equally important.  
 Effective risk reduction can be achieved.  
 Most of the important factors for risk  
 reduction are people, goods, services,  
 and the use of technology. These factors  
 should be addressed in the context of the  
 global transition.





India representing ITR, Aadhaar, welfare, insurance, public order (social media), cloud and mobile systems, and facilitating the transition of various types of government services. All these initiatives are being implemented through the Government and other stakeholders for the goal of good governance.

According to the press release, Digital India has successfully bridged the distance between government and citizen. Through Digital India, the government has been able to provide various services to the beneficiary through the computer-based system. The following are some of the initiatives of the government to improve the services to the citizen through Digital India:

- 1. **Common Service Centres (CSCs)** - Through these centres, the government is providing various services to the citizen. The CSCs are being established in rural areas and are providing various services to the citizen. The CSCs are being established in rural areas and are providing various services to the citizen.
- 2. **Unified Mobile App for Government Services (UMANG)** - This is a mobile app that provides various services to the citizen. It is being developed by the government and is available for download on the Google Play Store and the Apple App Store.
- 3. **Pradhan Mantri Aardram Mission (PMAM)** - This is a mission that is being implemented by the government to provide financial assistance to the citizen. It is being implemented through the Pradhan Mantri Aardram Mission (PMAM).

A digital project has been implemented at district and sub-district levels of all states/UTs, providing all citizens the facility to access various services such as Certificate Issuance, Death, Income, and Local Resident, Pension (Old Age Disability and Widow), Electoral, Consumer Court, Avenue Court, Health and Welfare, and various departments such as Commercial Tax, Agriculture, Labour, Employment Training

and Skill Development, etc. Presently, 40% of services have been launched in 700 districts across India.

- 4. **DigiLocker** - It is facilitating the digital availability of public documents. Digital Locker has more than 1.2 crore users and more than 1.2 crore documents made available through DigiLocker from 1,100 government organizations.
- 5. **Unified Payment Interface (UPI)** - It is the online digital payment system. It is integrated with 170 banks and facilitated over 500 crore transactions worth over Rs. 15 lakh crore per day facilitated for the month of June 2021.
- 6. **CO-WIN** - It is an open platform for the monitoring of registration, nomination, withdrawal & casting of votes for COVID-19. More than 200 crore voters have been registered and 100 crore registrations have been facilitated by CO-WIN.
- 7. **MyGov** - It is a citizen engagement platform that is developed to facilitate government. More than 1.18 crore citizens are participating in MyGov.
- 8. **MinPatrika** - It is a digital platform for the citizen. It is being developed by the government and is available for download on the Google Play Store and the Apple App Store.
- 9. **MySathi** - This platform has been developed to help the citizen in various matters such as utility bills, etc.
- 10. **Direct Benefit Transfers** - It is a platform for the citizen. It is being developed by the government and is available for download on the Google Play Store and the Apple App Store.

cross-border transfers to citizens. In fact, by 25.3 lakh crore has been disbursed through the DBT system.

- **Digital - Diksha** is a national-level educational platform that helps students and teachers to interact, collaborate and leverage 2 content platform to achieve learning goals at scale for the country. As on 27<sup>th</sup> July 2022, 2.65 lakh users are available and more than 25 crore enrolment have been done.

The government has made the following move in the direction of digital governance for the nation's socio-economic development. Here are some quick facts:

- **Open Government Data** - A platform for open government data has been created in order to support data research and innovation. Research was regard to professional data. Over 5.6 lakh datasets are tracked over time from 12,500 sources. The platform has made 235 lakh downloads to date.

- **Ah Sam** - A platform called Ah Sam has been created to make data available with users across India. More than 2200 Ah Sam and 1000 user organisations are available on the platform. The 'Integrated National Data Governance Framework Policy' was created as 'Ah Sam' with the intention of making the full potential of digital data for its digital transformation, increasing the effectiveness of citizen governance & public service delivery, and building data-based trust and innovation. The proposal policy is still being revised. By March 2022, nearly 1000 users and 5000 datasets have been made available through the Ah Sam platform for public services.

**Concluding remarks**

All levels of government need to be equipped by digitalisation. For our government should receive digital digital India India. We

are the most popular in the public eye. In the primary form of contact for many, these digital connectivity should go hand in hand with improving digital infrastructure, especially in rural areas. In countries like India, where citizens come from many linguistic origins, e-governance through regional languages is highly beneficial. There are many successful projects currently underway in the sector, but very few of them are on a national scale. It's important to reproduce and log on effective models uniformly across the nation. It is important to address the ecosystem issues of the national application created by different states. Their integration to create a single view, another use of data mining and analytical approaches for decision-making. It is clear that consistent growth across all states and regions is important for the economic stability of government in the nation.

A digital India in less than 100 days will be necessary to complete the digital India within sustainable development objectives by 2030. It will require revolution, not a revolution.



manages the public affairs of a firm and attends to the business of its owners. It will set how it engages with the society and the business sector. The firm will be set towards the pursuit of sustainable development through R&D and innovation. Social entrepreneurship and the growth of information and communication technology have the potential to accelerate various programs, from the digital divide and other social inclusion activities that focus innovation across a variety of industries.

To prevent the spread of news and greater digital divide, digital information, technology and other firm products by the digital era must be carefully managed. Governments should coordinate with the business sector in research and development particularly in allowing the broadband connectivity. Also, it is important to have a major social impact when utilizing new technology.

The digital revolution will require technological experiments that will determine a comprehensive approach that offers users experience, rapid, accessible, and sophisticated services. The digital sector is more complex, and not prepared for the change. Traditional methods may not apply in various situations in digital strategy, law and regulation may be necessary with agreement based on creating online services. The focus will center on how digital environment can change governance by increasing digital trading and welfare in digital sustainable development goals.

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# Post Office Services at the Doorsteps

Amith Shrivastava

Ensuring of postal services at the doorsteps of remote and inaccessible delivery of financial and other services are being provided in the rural areas. India Post is offering its services at an important place in the rural's Government policy by not only providing the services of India Post but also providing the delivery of financial and other services at the doorsteps of the rural areas. India Post is offering its services at an important place in the rural's Government policy by not only providing the services of India Post but also providing the delivery of financial and other services at the doorsteps of the rural areas.

**I**ndia Post is a 158 years old organization with an expanding network of 128 lakh post offices, situated in every nook and corner of our vast country. Come with your 158th anniversary under a global event. Now, India Post is a vibrant organization which is rendering not only postal but also several diverse services such as banking, insurance, education, and other services of Savings and Prudential of Insurance. The Minister, Union Minister, through all these services, it offers its commitment for ensuring new and cost-effective solutions.

India Post is the very institution of the Central Government which is present in the entire country.

The network is primarily rural-centric, with more than 80 percent of the post offices being situated in villages. The 1.4 lakh village post offices cover more than 7 lakh villages of the country. On an average, each village Post office covers close to 5 villages. Till recently, the village post office was primarily a tiled brick and mortar entity, where citizens from diverse villages had to physically travel to avail the postal services. This not only created issues of service delivery, but also made it expensive for rural citizens to spend time and money to visit the Post office.

This situation has undergone a drastic change since the roll out of the Rs. 4000 Crore Communication



project is in the requirement of Post. The account, which, though, appointed in 2011 and had not with more function, was put on last track in 2014. It was revised that all 1.38 lakh POs were reworked with all the services rendered by the post office, as maintainable today, in the services rendered by Post Office in other top tier. This is also available to POs customers. The vital postmaster and yourself small equipped with a hand held DASHA device or with an exact phone, enabling them to render multiple services at the door step of citizen. The DASHA device is a "Mini in your pocket" handheld device with mobile connectivity and having a list of services, carrier card reader and a biometric thermal printer, which enables the postmaster to render postal as well as financial services. After proper biometric authentication of citizen, all the services, or of their father. Since June 2014, DASHA devices have been used for 85,25,776 transactions, involving an amount of about Rs. 1.22 lakh Crore. Most of these transactions have been done in the field and are within the domain of the village post office. Today, it is a tremendous gift to see a village postmaster at the agricultural field or ANGDRA with a DASHA device, ready to serve 54 critical OTC or other services available.

Rendering of social services is the objective of mission for transformation delivery of financial and other services available in the rural area. Mission has highlighted that for a rural citizen to withdraw cash from a bank or ATM, he/she needs to spend around Rs. 100-200 per trip. For a better citizen to spend this amount, all the withdrawing a percent of Rs. 1000 defines the very purpose of social benefit. Hence for such social welfare schemes, it remains a fact that, despite the essential success of the OTC, communication related rural transactions are still cash heavy. Doorstep delivery of cash by the postmaster at POs, under "Mission for High socio-economic benefits".

In the March 2015, delivery of financial services, India Post Payments Bank (IPIB), launched by the Prime Minister of Government 2014 has proved to be another major milestone. Within a short span of time, IPIB has introduced full on a service payments bank rendering post office financial services through a bank enabled platform, using the IPIB and digital infrastructure of the post office. IPIB has provided over 1.5 lakh Aadhar

based access to citizens and village entrepreneurs, which have enabled delivery of doorstep banking services. Despite initial funding amount to payments bank by RBI, IPIB has offered over 1.8 crore accounts, more than 40 percent of which belong to women, almost 70 percent of which have been opened in months of each village. So far, IPIB has opened 2.36 crore transactions, totaling Rs. 1.57 lakh crore, and more than 70 percent of which have been done by women in rural area. Aadhar enabled Payments System (AePS) which is the most simpler service of IPIB, has enabled the customer to make withdrawal from any bank (not public sector bank) account which has been linked to Aadhar, after biometric authentication of the account holder. So far, more than Rs. 15000 crore withdrawal from A.TM using AePS accounts, have been done by IPIB using AePS. During COVID-19 pandemic, AePS enabled the customer to deliver more than Rs. 12,000 crore more at the doorstep of customer. The IPIB proved to be a lifeline for so many distressed citizens during lockdown, when most of the ATMs were dry and bank branches closed.

In addition to banking services, IPIB also renders insurance (life, medical and accidental services), Aadhar services (mobile number activation) and DASHA city certificate to postmaster. All these services have been the most successful, reaching more than 1 crore transactions in about three years, and all delivered at doorstep. The digital OTC (e-money OTC) services rendered by IPIB through transactions at doorstep of postmaster are highly popular and have saved more than 100 crore more from bank branch or Post office, over every year. To realize their vision about use of technology for financial inclusion, optimum utilization of the post office service delivery network of India Post, use of numerous village have been transformed through use of digital technology.

The impact of technology has been felt at the level of OTC as well as at post office services as well. Though not yet available in accounts, registered for post office has been made available at post office. The post office Financial Seal Culture, Act of which the operational have totally transformed the access of citizens to payments. Now, citizens need not sit at counter to payments. Now, citizens need not spend money and time to travel to bank located several kilometers away for opening a passport, generally in their POs for opening a passport, they can apply bank services available to village



Our award-winning, industry leading range of products (IQ) and services, further supported, Secure over £3.6bn Post Office Address Centre Network is easy for citizens to register for and our award-winning address / redirection service is further. More than 620,000 citizens have used their Address services in post offices. 1.75 million bills in the State of Utah. Post Office also continues to work with UK and AQC procedures. Network available through all our 1,100+ Post Office Customer Service Centres. These services are being combined at footprints using the most secure available with strong protection.

**Read Ahead**

With the advent of cutting edge technology which is simplifying the user interface of complex applications, more and more customers are expected to shift to self-service (self-serve), mobile banking, self-driving kiosks for loading and delivery of goods etc. However, in a country like India, where a large population is rural area is still not educated enough to use the self-service system, the role of Post Office is expected to remain unchanged for the next 10-15 years. Although the present Government is taking a huge push on making bank and other basic financial services available to all and banks of every village, the most effective way to ensure financial inclusion would be to help the village formative systems with a secure and easy to use technology. Hence, enabling them to provide banking, AQ and AQ services in delivery of the package.

In 2021, the Government of India has approved the IT 2.0 project. IT 2.0 project will allow Post, with

an outlay of Rs. 5760 crore. Considering the higher political priority for IT 2.0 over any discipline of projects, the Government has approved this project for a period of 4 years, instead of the usual five years which corresponds with the term of the Finance Commission. IT 2.0 project of India Post shall serve to not only support the Aadi systems, but also build more services based platform for providing almost all the current and future services delivered by India Post, through the mobile devices. The IT 2.0 project of Department shall have the following important features:

- IT 2.0 will provide 100% self-automated support for any Government application. Enabled the robust IT system on one hand will speeding delivery of services on the other.
- The self-serveable central ecosystems will enable all Government departments / organisations to integrate their services / products with India Post, by using mobile based apps. India Post will provide physical delivery of services.
- Similarly by creating open platform across other delivery departments / service agencies can give and able to use their delivery services of India Post.
- Every scheme of the government can be given priority for its delivery to every district and geography of the country using India Post IT enabled infrastructure capabilities.
- With the net-mile network of 3.5 lakh post office having remote based service delivery application connected to all the customers of central / state governments, more IT enabled public delivery staff will enhance the reach of the Government. An post office and delivery staff will be connected using a mesh of high speed limited connectivity using open network.
- India Post will deploy Artificial Intelligence, machine learning and big data analytics for faster delivery and will provide with high visibility to ensure supply chain operational efficiency. This will help reduce Government debt and improve efficiency.

Moreover, with the rollout of 5G services to all the telecom service providers in the country, it would soon become easy to Post even data flow

applications on any smartphone and help the user access and direct all services currently available to other customers or through apps and mobile establishments only, at their discretion. The real success of India Post is therefore all set to play an important role in delivery of O2C and B2C services in villages.

It is being observed that both Central and State Governments are increasingly relying on courier service delivery of Government services or along with the delivery of their public deposits or the rural areas. Even cotton and medicines are being ordered for operation delivery by some State Governments. As a partner and supporter of the digital growth and a reliable technological partner becomes available with a Government agency, a large percentage of Government services are going to get online and first office that play an important role in providing the physical network. To make such services available at the doorstep of rural areas also comes with service. Following the liberalisation of the national-level telecommunication network in the country, Government of India is therefore, ready to partner India Post with the delivery of many e-governance services ranging from B2B to B2C, from ticket booking to e-cash remittance. In the recently concluded Madhya Pradesh e-governance conference, Anand Kumar Mishra (IAS), India Post, initially got a receipt of work by using e-governance flag through the mail network of post office, at a very nominal price of Rs. 25, but for the first time such flag was also sent through the post office network and of post that, no delivery charges were taken by the user. The delivery of flag material will be India Post during the 15-day campaign. With that, 90 percent of such e-governance services originated from the area. The main objective of India Post has been to get the fastest that the service of e-Governance from a user to originate from that location and to provide the very low rates that he has to pay for e-Governance.

The post office is also taking an important role in the Open Network for Digital Commerce (ONDC) and Open Digital City Project (ODCP) initiatives of the Government by making available its network for other partners in the ONDC, also they have started an online public procurement working



along with Department for Promotion of Industry and Internal Trade (DPIIT) of Government of India and Uttar Pradesh Government, in the region.

In addition, India Post has signed an MoU with Government of Madhya Pradesh (GoMP) for providing e-governance services to MGNREGS workers registered as e-Card. So far, more than 200 e-governance services have been provided and more than 1000 e-governance services are being provided and expected to add more e-governance services. A similar arrangement with Tamil Nadu has been worked out and India Post is currently providing e-governance services at all workstations of post office across the country.

Along with that, India Post is also providing e-governance services to the rural population across the country. The main objective of this service is to provide e-governance services to the rural population across the country, including rural areas. This service is expected to be a delivery of services using the physical infrastructure of India Post, managed by the IT backbone. As such, the use of e-Governance would not be possible without India Post providing e-governance services, thereby allowing for multiple e-governance.

For these reasons, the successful implementation of the e-governance project by India Post provides a major priority as it would help create a truly self-reliance with the help of state-of-the-art IT backbone and expertise of providing the kind of services in public domain or public sector or private mode. The possibility of using this e-governance resource would be immense, from services such as railway reservation and e-governance, including an application for passport, which are currently

available only through 24x7 Post Office e-Limitless. Call centre will be made available at all locations for all the Post Office transactions. This will not only enhance the ease of availing these services, but would also improve citizen compliance. Another initiative of India Post which is expected to have far reaching consequences on door-step delivery of services is the Digital Address Code (DAC) project. Under this project, each address of the country is proposed to be geo-tagged and assigned a unique alphanumeric code. DAC is expected to make door-step services delivery easier for not only Government agencies, especially the rural and emergency services, but also for private entities which are involved in home delivery, such as food delivery, e-commerce delivery, courier, etc. The existing entry barrier faced by start-ups, on account of a possible data deficiency, can also be mitigated to a great extent through DAC.

It will also enhance the timely identification of the delivery of goods in urban and

semi-urban areas of the country. Rural banking is just going to follow suit as India Post and other private players strengthen and build their rural networks. The service delivery sector is going to see a similar revolution and in the expectation of the citizen adequately in rural areas also, both Central and State Governments shall be forced to take such innovations. The Post office which is the largest postal network in the world has accepted this challenge and is further strengthening its IT infrastructure to render all postal, GC and several B2C services at the doorstep of citizens, especially in the rural areas, where citizens still find it difficult to get services. By 2024, when the major portion of IT 2.0 project of India Post shall be complete, the Village Post Office (VPO) is rendering, on demand, a plethora of GC and B2C services at the doorstep of citizens.

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# Technology Integration for Quality Education

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As per the National Education Policy (NEP) 2020, "Given the explosive pace of technological development, it is clear that technology will impact quality of both school facilities and environments including digital environment. It is certain that technology will impact education in multiple ways, many some of which can be foreseen at the earliest time. New technologies involving artificial intelligence, machine learning, block chain, virtual reality, cloud-based computing devices, adaptive computer testing for individualized learning, and other forms of educational software and hardware will not just change what students learn in the classroom but how they learn, and these developments and beyond will require extensive research both on the technological as well as educational fronts. Therefore, the future of the educational system will be determined by the response and integration of technology which will serve the purpose of bringing efficiency in educational system and transformative impact in the existing system."

**T**echnology is the predominant driver of the 21<sup>st</sup> century which is affecting each and every sphere of human life. The impact of technology is such that the lines between the physical, digital and biological spheres are increasingly blurring and is rapidly changing the way people live, work and communicate. The world everywhere and in governance have not seen a clear disruption in terms of policies, institutions, and institutional structures. With the evolution of digital technologies, both administrations and institutions across the globe have been continuously transformed structurally and in terms of the relationship between the governments and citizens. These observations are also drawn from two decades of analytical research and the monitoring of trends within the framework of the United Nations' E-government survey. While many very country is engaged in the pursuit of digitalisation, not all have achieved the same level of development, and while sustaining an all-time low commitment

to modernisation and digital transformation, approaches and outcomes vary greatly. The COVID-19 pandemic has further exposed digital divides between and within countries and across social groups. One of the key lessons learned during the pandemic is that the future is hybrid and not digital. In fact, the primary objective of technology is to recognise and foster human potentials and support sustainable human development through digitalisation.



The UNESCO definition (new conceptual) of e-governance is stated as "E-governance is the public sector's use of information and communication technologies with the aim of increasing information and voice drivers, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective. E-governance involves new styles of interaction, new ways of deciding and deciding policy and procedures, new ways of accessing information, new ways of listening to citizens and new ways of organizing and delivering information and services. E-governance is generally considered as a more efficient than a Government, since it can bring a change in the way citizens relate to Government and citizens. E-governance can bring both new concepts of citizenship, both in terms of citizen needs and responsibilities. Its objective is to engage, enable and empower the citizen." The pandemic amplified the importance of e-government and digital technologies as essential tools for communication and collaboration between policy makers, private sectors and societies across the globe. E-governance has become the cornerstone for building effective, accountable, resilient and inclusive institutions at all levels, as called for in Sustainable Development Goal 17.03, and for strengthening the implementation of Goal 17 (UN E-Government Survey 2022).

With such revolutionary impact of technology education sector could not be an exception and during the COVID-19 pandemic, the pace of integration of technology in teaching learning processes has increased exponentially. During the pandemic, digital technologies played a pivotal role in holding the civil society together by supporting the provision of socio-fundamental services in the field of health, education, and service sectors. National Education Policy (NEP) 2020 gives utmost importance to technology and states that "The thrust of technological intervention will be to the purposes of improving teaching-learning and evaluation processes, supporting teacher professional development, enhancing educational access, and streamlining educational planning, management, and administration etc. It will recognize and address the issue of digital divide and states that "The benefits of open/digital education cannot be leveraged unless the digital divide is eliminated through concerted efforts such

as the Digital India campaign and the availability of affordable computing devices. It is essential that the use of technology for offline and digital education, especially address concerns of equity."

In the school education sector of India, technology has been used both in governance processes to improve the efficiency and effectiveness of schooling system and also for enhancing quality of education. Various governance related technological interventions have been initiated and undertaken by the Government which are given below:

- (i) **UISSE+** (<https://data.uis.se/indicators/gov>)
  - (ii) It is a well-known fact that timely and accurate data is the basis of sound and effective planning and decision-making. Realizing the need of this, Ministry of Education (MoE) had initiated Unified District Information System for Education (UIDISE) in 2012-13 replacing DISE for elementary and secondary education which is one of the largest Management Information Systems for School Education covering more than 13 million schools, 9.6 million teachers and 254 million students.

UIDISE is an updated and improved version of DISE. This is now online and has been collecting data in real-time since 2022-23. UISSE+ provides rapid real-time and reliable information for an objective evaluation of the system, which can be used for deriving evidence based specific interventions for improvement in the school education sector.

Further, UISSE+ has a mandate of collecting information from all Haryana and unimproved schools which are providing formal education from Pre-primary to 12. UISSE+ collects information through an online Data Collection Form (DCF) in parameters ranging from students, schools, teachers, infrastructure, equipment, examination result etc. Ever since its introduction, UISSE+ has provided the status of the official database of the MoE and is now operational in all the districts of the country.

- (ii) **Performance Grading in Schools (PGIS)** (https://www.education.gov)
  - (iii) The PGIS is a tool to provide insights on the status of school education and to ensure transformational change in the

Availability in the field of age indicators that are used, standards and criteria for improvement of quality of education and performance across 27 indicators on school education are being closely and flexibly monitoring all stakeholders to design appropriate interventions to bridge them. This will be provided from 2021-22.

It is further in the year 2021-22, around 85 education have been developed for different states the performance in school education started from the year 2015-16 to 2019-20 and also started school level indicators for 2021-22.

The main objective of the work will be to the 2021-22, mainly, developing multi-pronged interventions that all things about the school level, to be effective and improve. The objective of the work will be to the 2021-22, mainly, developing multi-pronged interventions that all things about the school level, to be effective and improve.

001. Online Survey System for National Education Research (NER) will be used in the year 2021-22. The work will be to the 2021-22, mainly, developing multi-pronged interventions that all things about the school level, to be effective and improve. The objective of the work will be to the 2021-22, mainly, developing multi-pronged interventions that all things about the school level, to be effective and improve.

In addition, online survey system will be used in the year 2021-22. The work will be to the 2021-22, mainly, developing multi-pronged interventions that all things about the school level, to be effective and improve.

provide a comprehensive Digital Survey for National Education - Online for the year 2021-22. The work will be to the 2021-22, mainly, developing multi-pronged interventions that all things about the school level, to be effective and improve.

(iv) NDEAR (National Digital Education Architecture) (<https://www.nde.nic.in>) and Vidyya Samiksha Kendra.

NDEAR has been launched with a high priority to create a unified national digital infrastructure to integrate and catalyse the education ecosystem. NDEAR has been conceived as a unified National Digital Infrastructure to integrate and catalyse the education ecosystem. The objective of NDEAR is to facilitate achieving the goals laid down by NEP 2020, through a digital infrastructure for innovation in the education ecosystem, ensuring autonomy and participation of all the relevant stakeholders. NDEAR will enable a common set of standards and supports to be deployed in building class and learning technology for education for the Vidyya Samiksha Kendra (VSK) for both groups at national level as NCERT and to avoid a leveraging cost and standard in digital technology in learning outcomes via all school student, teacher and school equity. VSK will bring services to the work force with the ecosystem by integrating data from different systems and ensuring quality teachers and prompts to bridge the gap. The objective of NDEAR is to facilitate achieving the goals laid down by NEP 2020, through a digital infrastructure for innovation in the education ecosystem, ensuring autonomy and participation of all the relevant stakeholders. NDEAR will enable a common set of standards and supports to be deployed in building class and learning technology for education for the Vidyya Samiksha Kendra (VSK) for both groups at national level as NCERT and to avoid a leveraging cost and standard in digital technology in learning outcomes via all school student, teacher and school equity. VSK will bring services to the work force with the ecosystem by integrating data from different systems and ensuring quality teachers and prompts to bridge the gap. The objective of NDEAR is to facilitate achieving the goals laid down by NEP 2020, through a digital infrastructure for innovation in the education ecosystem, ensuring autonomy and participation of all the relevant stakeholders. NDEAR will enable a common set of standards and supports to be deployed in building class and learning technology for education for the Vidyya Samiksha Kendra (VSK) for both groups at national level as NCERT and to avoid a leveraging cost and standard in digital technology in learning outcomes via all school student, teacher and school equity. VSK will bring services to the work force with the ecosystem by integrating data from different systems and ensuring quality teachers and prompts to bridge the gap.

(v) PRABANDH (The Prabhakar and all Department of School Education and Office for National Education - Project Approval, Software Development and Data Mining, from 2021-22, to 2022-23, has been approved. The objective of NDEAR is to facilitate achieving the goals laid down by NEP 2020, through a digital infrastructure for innovation in the education ecosystem, ensuring autonomy and participation of all the relevant stakeholders. NDEAR will enable a common set of standards and supports to be deployed in building class and learning technology for education for the Vidyya Samiksha Kendra (VSK) for both groups at national level as NCERT and to avoid a leveraging cost and standard in digital technology in learning outcomes via all school student, teacher and school equity. VSK will bring services to the work force with the ecosystem by integrating data from different systems and ensuring quality teachers and prompts to bridge the gap.



Shiksha) on the basis of key indicators that also take performance and output areas for improvement/2 grades of Shiksha) on their performance. About 77 districts in school education and 166 districts are already working at Shiksha) to design sustainable interventions to bridge these. This was introduced from 2018-19.

It, addition to the 1000 AIs, around 40 institutions have been provided for Districts across the performance in school education. Continued effort for the years 2018-19 & 2019-20 has to be continued in terms of school and systems.

The major strength of the idea will be the State) to identify underlying multi-level interventions that will bring about the much needed school education reforms. The pillars of the idea therefore is to help the State) to support the gap and accordingly provide areas for intervention to ensure that the school education system is robust at every level.

- 64) **Online survey platform for National Curriculum Framework (NCF)** With the arrival of the 2020, the idea of education has been towards learning about how to think critically, solve problems, take the creative and multidisciplinary and how to analyse, work and learn new material. In building this, **Platform** is expected to work to make education more experiential, multi-dimensional, multi-oriented, multi-skill, and multi-level. To make the above education a reality, a new NCF is being developed by the NCERT. The backbone of this framework is to be in three parts as if it is covering a National Curriculum Framework which suggestions are issued from all stakeholders on the basis of which new NCF will be developed and in 2021, a **Platform** for NCF was launched.

Prabandh, a **Platform** has been developed under the leadership of NCF 2020, the **Platform** has also been made available to ensure participation of all stakeholders in the process of the Curriculum development.

ground. A **Platform** Digital Survey for National Curriculum Framework has been launched. Under this survey, suggestions and feedback has been collected from the public at large for the formulation of the NCF.

- 65) **NOLAT (National Digital Education Architecture)** (<http://www.nolat.gov.in>) and **Vidya Samiksha Kendra**

NOLAT has been launched with a target aimed to create a unifying national digital infrastructure to integrate and catalyse the education ecosystem. NOLAT has been conceived as a unifying National Digital Infrastructure to integrate and catalyse the education ecosystem. The primary aim of NOLAT is to facilitate achieving the goals laid down by NEP 2020, through a digital infrastructure for integration of the education ecosystem, ensuring efficiency and participation of all the relevant stakeholders. NOLAT will enable a common set of processes and approaches to be followed in building, using, and re-using technology for education. Further, **Vidya Samiksha Kendra (VSK)** has been set up at national level at NCERT and is aimed at leveraging data and technology to bring a big leap in learning outcomes. VSK will include Student, Teacher and School system which will bring synergy to the work being done in the ecosystem by integrating data from different **Systems** and improve student, faculty, and content to bridge the gap. This will cover the entire cycle of school ecosystem and will involve by using big data analysis, artificial intelligence and machine learning in order to enhance the overall ecosystem of the education system and thereby improve learning outcomes. An **Agency** and IITs have been provided financial support under **Samagra Shiksha** scheme for setting up VSK.

- 66) **PRABANDH** (<http://samagra.gov.in>) Department of School Education and Literacy has launched PRABANDH - Project Approval, Budgeting, Accountability and Data Handling System in 2020. This system has been developed under **Samagra Shiksha** as a significant MP towards leveraging technology to enhance efficiency and financial transparency of the Centrally Sponsored Integrated Scheme

Age school libraries. PRABANDH system can be accessed at [www.samagra.gov.in](http://www.samagra.gov.in). It has more than 10 lakh scanned books and can be accessed from the Texts, Tools, Photos and GPS Lens.

A new revolutionary **Samagra** has been launched in the PRABANDH system for ability of monthly status of physical and financial progress under the **Basic** interventions of Sarva Shiksha such as text books, uniforms, transport, allowance, status of girl work, teacher working etc.

Technology integration has also been an integral part of enhancing quality of education, various initiatives have been undertaken to address the **challenging strategy** which are as follows:

- (i) **PM e-Vidya** (Prati-Vidya) education portal: The COVID-19 pandemic prevented Copyright for further collection led to the same time to become critical in bringing out various new strategies and addressing the lack of technology integration. PM e-Vidya launched during the time of pandemic is one with comprehensive interface which allows various access to digital education through multilingual approach. The digital content of the content has been available in "One Nation, One English Platform" (ONEP) can be accessed by women and teachers across the country and currently supports 20 Indian languages. Each state/UT supports the platform in its own way. In order to facilitate and share to use the various languages and dialects of the states in design and the platform for teacher, learner and administration. DSKA works with 1000 PM e-Vidya centres for the education sector. Educational content repository includes government, academic institutions, independent and private organisations to promote, maintain and manage a content platform to allow learning from a user in the country in the time of COVID-19 pandemic. The platform has experienced unprecedented rise in usage by women

and teachers across the country. There have been more than 5 billion learning sessions, 29 billion learning minutes, 23 billion page hits. DSKA could successfully handle such traffic owing to its robust tech stack, futuristic design and distributed group of managers.

DSKA currently hosts over 1,000 textbooks integrated with QR codes, including the NCERT textbooks and the state Elementary Textbooks (ETB). There are more than 3,00 lakh digital content in English which cover mathematics, science, reading and practice materials, interactive resources and More More, the digital content to aid in the learning and learning processes, a rich repository of varied resources was contributed by School/teacher/teacher, content partners, NGOs, corporates under CSR under VidyaVasini against the various content requirements of NCERT/SEET/State/UTs. Also more than 40,000 content items have been contributed under VidyaVasini. Further, NCERT has recently entered into an MoU with BYJU'S under which new language videos are being developed jointly. More than 1000 QR videos have been produced and about 100 videos have been included in DSKA for Children with Special Needs. 2000 videos in 10 languages (200) based content, Murli Vidyas, will an audio streaming podcast and Kaha Vidyas, will 24x7 broadcast and learning packs for Daily Family for learners with disabilities and Low vision have been produced and the a total of 3424 audio spots have been developed. In addition, assembly words have been updated by DSKA.

At present, 12 PM e-Vidya 20x7 TV channels (One One One Channel) are video 1 to XIII, are functioning. The content delivery content on 24x7 basis are feed by DSKA through QR codes. A Future content will be well up the COE is also being effectively used by women of grade 9 to 12.

iii) **Capacity building of teachers through NISHTHA online** (<https://nisha.nic.in>) The NEP 2020 clearly focuses on empowering teachers by pulling out the rote at different levels of expertise/ stage and competencies required. The policy has stated that each teacher will be entitled to participate in at least 50 hours of Continuous Professional Development (CPD) program every year for their own professional development across their own periods. CPD will systematically cover the listed pillars/competencies: Foundational literacy and numeracy, experiential learning, cross-curricular learning, Openness, Learning, and Empowerment, Interdisciplinary, and Storytelling based approaches, etc. National Institute for School Heads and Teachers' professional development (NISHTHA) an integrated digital programme was introduced during 2019-2020 for re-orientation and the shift of roles/development of teachers. Under NISHTHA scheme, 1 year training during 2019-20 2020-21 2021-22 500,000 10,74,728 teachers and head teachers working in schools run by Government were covered under 24 years (18) during the pandemic, 2020-21 was completed during 2021-22 in which under NISHTHA 1.0, about 29 lakh government and head teachers at elementary education level (Class 1-8) were re-orientated and 8.46 crore government teachers under AICTE Ministry of Defense (MoD) and Ministry of Tribal Affairs (MoTA) had completed training and were certified. Subsequently, NISHTHA 2.0 for Secondary, Middle, Senior/High School level teachers and NISHTHA 3.0 for government school teachers of AICTE were being launched for training 10,00,000 of teachers at all levels. A total 25 lakh secondary teachers and 12 lakh primary and pre-primary teachers have completed NISHTHA 2.0 and NISHTHA 3.0 respectively.

Keeping in view of global education during COVID-19, the Government decided to take digital in the education for 2021-22 onwards.

Due to digitalisation of learning to reverse the learning loss caused by the academic disruption due to the COVID pandemic situation, the following initiatives have been introduced in August 2021-22 to expand the scale and scope of digital technologies and to ensure learning to all with equity to cover all students at all levels of education, keeping in view India's size, diversity, complexity and diverse population.

- (i) **200 TV Channels:** Due to learning gaps caused by the pandemic-induced closure of schools, the need to deliver supplementary teaching and to build a robust mechanism for education delivery for this situation, the line of the one TV channel program of 200 NISHTHA will be expanded from 12 to 200 TV channels. This will enable all states to provide supplementary education in English/Hindi/Regional for classes 1-12.
- (ii) **Virtual Labs:** NEP 2020 recommends routine virtual laboratories so that all students have equal access to quality content, critical thinking, and hands-on experience for teaching-learning of Science, Mathematics and Vocational Skills. To support this program 750 virtual labs in science and mathematics and 77 virtual labs for the vocational training programme, will be set up in 2021-22.
- (iii) **High Quality E-Content:** High Quality e-content in all common languages will be developed for delivery via internet, mobile phone, TV and radio through Open-Teaching.
- (iv) **Competitive Mechanism For E-Content:** A competitive mechanism for the development of quality e-content by the teachers will be set up to empower and equip them with digital tools of teaching and facilitate better learning patterns.

### Conclusion

The NEP 2020 calls for investment in digital infrastructure, open teaching platforms and tools, virtual labs, digital assessment, online assessment, technology and pedagogy for online learning.

learning etc., with the promotion of multilingualism and the process of bridge of teaching and learning through innovative and experimental methods, including through certification and open schooling or the cultural aspects of the languages – such as films, theatre, storytelling, poetry, and music – and by drawing connections with various relevant subjects and with real-life experiences.

Technology will be integral in developing lifelong learners who have a growth oriented, social, collectivity, drive to explore and learn and in ongoing, voluntary and self-motivated pursuit of knowledge. An inclusive, equitable, affordable and integrated digital ecosystem is needed to facilitate and sustain lifelong learning and to reap the benefits of inclusive technology development in VET. Research is left behind.

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**Ushering Digital Literacy in Rural India**

Pradhan Mantri Kaushik Digital Yojana (PMKDY)

5.58 crore candidates enrolled

5.61 crore candidates trained

**GOOD NEWS**

**Atmanirbhar Defence is a Global Hit!**

100% indigenous in aircraft defence

5 prototype aircraft, etc.

Exports valued at over 2000 crore of INR by 2025

learning (ELL) with the processes of reading/writing and the power of language in teaching and learning through interactive and experiential methods, including through gamification and apps. Its working is the cultural aspects of the languages – such as films, theatre, storytelling, poems, and music – and by drawing connections with various relevant subjects and with real-life experiences.

Technology will be integral in developing skilled workers who have a growth mind-set, create curiosity, drive to explore and find fulfilment in complex situations, and self-motivated pursuit of knowledge. An inclusive, equitable, affordable and innovative digital ecosystem is needed to facilitate and improve lifelong learning and to reap the benefits of modern technology. Development for that no one is left behind.

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**Ushering Digital Literacy in Rural India**

Pradhan Mantri Gram Sadak Yojana (PMGSY)

6.50 crore candidates enrolled

5.01 crore candidates tipped

**GOOD NEWS**

**Aatmanirbhar Defence is a Global Hit**

India's success in building defence capacity

By Shri. Anand Kumar

Prime Minister's statement on Aatmanirbhar Defence

Success in building defence capacity

By Shri. Anand Kumar

## Mobile Governance

Dr. Anil Kumar Sharma, IIT Bombay

**M-Governance** is a subset term of E-Governance delivered through the mobile device, especially the smartphone. An internet connected mobile device is the answer to some of the most intriguing challenges and problems we face in delivering government services to the people. India is the best candidate for a successful implementation of M-Governance because of the phenomenal growth of a smartphone market (over 100 million in one year) and the challenges faced by the E-governance backbone in the area.

**O**ver the years, on the spirit of India, have been utilizing E-Governance services almost on a day-to-day basis. The communication technologies, especially the internet, and other electronic devices such as computers and mobile phones have paved way for building an effective and convenient interface to connect the government with its citizens for various reasons. This is E-Governance. However, with the growth of smartphone, internet and GPS access to mobile data connectivity across the country, M-Governance has started playing an increasingly effective and positive role in bridging the distance between the two constituents of governance

the government and the people. M-Governance, which is a subset of E-Governance, has emerged as an effective vehicle to connect the government's vision to reach out to every individual in the country. The impressive success of M-Govt in the country is an evidence of how the mobile phone device, in collaboration with the amazing power of internet, can play a pivotal and important role in making our E-Governance an effective reality.

M-Governance is a subset term of E-Governance delivered through the mobile devices, especially the smartphone. An internet connected mobile device is the answer to some of the most intriguing challenges and problems we face in

Access important documents with

# DigiLocker

Birth Certificate

X and XII Mark sheets

The advertisement features a green background with a white cloud-like shape at the top. Below the text, there are three people: a woman on the left holding a smartphone, a young boy in the center sitting on the floor with a tablet, and a young girl on the right holding a tablet. Thought bubbles above them contain the text 'Access important documents with DigiLocker', 'Birth Certificate', and 'X and XII Mark sheets'. The DigiLocker logo is prominently displayed in the center.

delivering government services to the people. This is the best evidence for a successful implementation of e-Governance because of the phenomenal growth of a nation-wide mobile services system of use. And the challenges faced by the e-Governance revolution in the other six EC countries concern the country challenges related with broadband internet connectivity, lack of physical infrastructure (including constant power supply) and a large rural population. Some of them however think they change if we get a bit innovative and leverage the e-Governance mobile devices with an internet or internet-connected PCs will work. This is exactly what e-Governance is important for India.

### Infrastructure at Service

While we will continue to work to strengthen our conventional infrastructure, taking all built steps as far along the northern rim of mobile networks will show that the country efforts are in gear. For the purpose of August 2015, India has 1.17 billion internet connections, of which 76 per cent were mobile phone connections. 300 million of 65 percent of those devices were smartphones, according to government and industry figures. The density has a little density of more than 60 per cent and has more than 60 per cent higher connections. These figures are close to the other top performing nations and show a clear reflection of the existence of a robust and dependable mobile and internet infrastructure in the country. A well-built infrastructure is ready to be exploited and used.

To deliver government services over digital devices, we need good mobile internet connectivity and securely distributed content on our mobile devices at around 1.5 megabits per second (Mbps) with the launch of 4G, we are seeing a significant improvement in this area as well. The cost of mobile connectivity has come down to levels affordable for the common man. On top of it all, we already have a strong fibre optic telecom infrastructure in place in the rural areas. The success of the country depends on connectivity.

In year 2015, while working at a public office during the first term of the Modi Ministry, IIRI, Nandan Nilekani has emphasized the importance of e-Governance through digital India is a not just 'Modi Government' but 'Major Government' being



an address at the 1st National Conference on e-Governance. He said that it is now the responsibility of elected governments, the money that has about 100 billion feet and you need to make programs according to the government and citizens. He said, "I urge you to explore ways to provide a strong service as possible through mobile, including the world's most stable internet." After four years since he was in the office, the country has made significant progress regarding an effective e-Governance model in place.

### Shining Examples of Success

There are four examples of e-Governance including our unique initiatives, transformation of major aspects of public sector organization, cloud computing and flexibility, better access to the citizen and easy interaction. There are four major e-Governance models, namely:

1. G2C (Government to Citizens): The government interact with citizen applications.
2. G2B (Government to Businesses): The government provides information and services to the B2B firms.
3. G2E (Government to Government): Economic sharing of data among various departments of the government.
4. G2G (Government to Government): Making government systems more transparent and services to citizens.

The major success and progress achieved through the digital India initiative and effectiveness of existing services may be improved by the use of e-Governance. We are already witnessing a digital revolution being placed in India in terms of making government services truly accessible.

### Ministry of Micro, Small & Medium Enterprises

UJVM Certificate now available on Digilocker



I would like to share a personal experience here. Recently, when I was scheduled to travel to Ternate from Jakarta, I was stopped by a policeman at the entrance of the Soekarno Sukarno Chairul Hasan International Airport, who said the policeman was carrying my driving license had already expired. I was not in possession of any other ID in my original form at the time though I had 100 copies of my National Identification Card stored on the mobile phone. The policeman refused to accept them and rightly so because they expected to validate a candidate's identity by examining a valid, original proof of identity. At this, I downloaded the Digilocker app and was happy to find therein a copy of my National Card which was happily accepted by the policeman. So, a tremendous change can be witnessed and has been caused by providing government service through internet to M Government.

#### Some Available Services and Apps Provided by the Government Over Mobile Phones

- Administrative Fee
- Electronic Bill
- Government Job
- Job Information
- Information System and Data
- Learning App
- Social App
- Social Media App
- Medical App
- Real Estate App

I will discuss a couple more in the next few paragraphs.

#### Mobile First and Digital India

Mobile-First and E-Governance are two related things like different words, but they originate from the same source, which is the primary aim to make services available to everyone. E-Governance is not independent from Mobile-First, but it's only a component, subject or sub-section of E-Governance. Primary objective of E-Governance is to help reduce procedural

and technical information and services systems, thereby, using different kinds of wireless and mobile technologies. The government stresses on the "One Web" approach, which means making as far as possible, the same information and services available to users, irrespective of the device or the browser they are using. This implies that all Government websites should be compliant with mobile devices to enable users of such devices to access the same information and services (to the extent possible) as available, say over the Internet through a computer.

At a time when responsive design has almost become a standard, technology has been able to address issues relating with differences in form factors, screen sizes, content delivery modes (even smart devices deliver content through local digital devices using Internet speeds and even cell level of users). Mobile devices have become so powerful that they can be used to carry out a variety of activities we have traditionally been using PCs for. Over a decade ago, it was felt that these smart devices cannot handle the task of transferring large amounts of information, especially complex forms of information. However, the new devices are packed with enough computing power and software programs to serve as a replacement for a variety of information and services. In addition to this, they are convenient to use and are almost always available. Things will continue to get even better in the future.

Again, mobile has all ingredients with in the government's vision for Digital India. It



and among the core pillars of the Digital India program, aimed at transforming India into a digitally empowered society and a knowledge economy. In fact, which focuses on transforming e-Governance services. This has a clear connection with M-Governance as the government is adopting technologies such as the Cloud and mobile platform for effective implementation of e-Gov. The key priorities of e-Gov include Mobile First, meaning all applications are designed/re-designed to enable delivery of services through mobile. Finland is a fantastic example of how this can be done.

### FinTech Revolution and M-Governance

The country has made impressive progress in use of mobile technologies, especially in the government. Currently, such as registration, voting, bank, financial services, stock trading, utility, commissions, considerations, transportation etc. Various International Mobile Health has seen tremendous growth in the country thanks to the delivery of critical services over mobile devices. The government used the concept of **Service Through UPI** in April 2015 and since its launch it has become a government portal. Mobile devices have opened a gateway to the new. For instance, the Indian Income Tax return is no longer tedious payment but is supported by the National Payment Corporation of India. The industry has also identified **authentication** and **personalization** as key components. It is used on mobile devices to instantly transfer funds between two bank accounts.

Not just the government sector, but small and large players in the IT industry including a few startups have taken advantage of the same to offer their own customized services which are mostly delivered through the mobile devices. notable among these are **Flipkart**, **Tytor**, **Quora**, **Wohiba**, **Google pay**, **Amazon Pay**, **Paytm**, **OneClick**, **Uber** and even **WhatsApp**. This has already

revolutionized the money banking and financial services industry in India.

It has recently emerged with 4G LTE feature phones which is an affordable addition to the existing service and is suited to those users who have not adopted mobile phones or have internet connectivity. One no longer needs to essentially have a smartphone and an internet connection to carry out financial transactions over mobile devices. Using the new service, the feature phone users will now be able to undertake a host of transactions, such as payments to friends and family, payment of utility bills, rendering of vehicle FAST tag, payment of mobile bills and checking their account balances.

### The Framework and the Master Application

As we dig deep back, the Ministry of Electronics and Information Technology has developed and rolled out the Framework of Mobile Governance. This was followed by the launch of Mobile Govt which provides an integrated platform for delivery of government services to citizens over mobile devices using SMS, USSD, IVRS, CBS, LIS or mobile applications installed on the mobile phones.

For its improved, well-structured and effective implementation, the Mobile Service Delivery Gateway (MSDG) was launched to enable delivery of public services over mobile devices. The gateway provided a gateway to deliver services through various mobile based channels, such as Short Message Service (SMS), Unstructured Supplementary Service Data (USSD), Interactive Voice Response System (IVRS), Call Broadcasting Service (CBS), Location Based Services (LBS), Mobile Payment Services and other applications. The Gateway is constantly evolving and will continue to add new channels and functionalities in future.

While we have explored a few successful examples above, any discussion on M-Governance

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it might cannot be complete without the unique initiative which represents a far-reaching and far-sighted vision of the government of India. According to the Ministry of Electronics and IT the UMANG (Unified Mobile Application for New-age Governance) is one of the key initiatives under the Digital India program to develop a seamless, unified platform and mobile app to facilitate a single point of access to all government services. It is envisaged to act as a master application, which will integrate major government services from various sectors such as Agriculture, Education, Health and Housing among others. The application will enable users to access e-Government services from the central Government, the State Government, local bodies and their agencies.

UMANG is conceptualised to bring governance on the fingertips of individuals through mobile first strategy. The multi-modal app is developed and managed by National e-Governance Division (NeGI) of the Ministry of Electronics and Information Technology (MeitY) by leveraging Mobile Government of India, to gradually convert to digital. It will be based by using inter-ministerial mobile mobile app and facilitate a one-stop solution to all other government services. This, in addition, will ensure app will be convergence of various efforts, called via umbrella, to reach out to the individuals via mobile phones. This will greatly simplify the access to government services and reduce burden on users of e-Governance in India.

### Challenges to Address

While we have made steady progress in our journey towards a successful and effective implementation and usability of e-Governance systems globally, we still face challenges which need to be addressed to make this endeavour truly successful. A large number of independently working applications and services is not such changes. A barrier when users who lack the required understanding of digital technologies, find a difficult to use, manage and access a significant number of applications through out a variety of tasks and services across from different departments. The UMANG, which is a priority, and will come from this standpoint. We can have better coverage of accessibility of it is available in a simple form, especially there is a need to reach out to every individual including illiterate.

Another important challenge is the broad economic and political and lack of recovery has opened the economy over to attract their services through a small device. Many of the initiatives to roll government service delivery operations they are helped by others. Low levels of digital literacy too is a factor for this. The government often runs awareness campaigns to encourage citizens to leverage digital skills and enhance the understanding of the internet and communication technologies (ICT) and there will continue to go hand-in-hand with the passage of time. Access to good infrastructure is still a luxury for many and there are some delays every household has access to one, the government's efforts have already resulted in a lot of smartphone manufacturing companies making their mark in India. Hopefully, infrastructure, collaborative touchpoints will help address this gap in time.

India is a country with incredible diversity and we cannot imagine India without its vibrant local languages. These languages are an important pillar for e-Governance perspective. While many star services are available in multiple Indian languages like English, we will need to make the other e-Governance services progressively inclusive and available, to ensure maximum impact.

The better information is government professional. View expressed are personal. (Dr. Srinivasan Aravamudan @srinivasan)

**DigitLocker can now be used as a Health Locker**

A result of its integration with Ministry of Health (MoH) Mission (Health)

- DigitLocker Health Locker
- DigitLocker Health Locker
- DigitLocker Health Locker
- DigitLocker Health Locker
- DigitLocker Health Locker

# e-Governance in Health Services Delivery

Urvashi Prasad

Over the last few years, India has witnessed several policy initiatives to make it a one-stop or self-help-oriented healthcare delivery. It is noteworthy that India's health sector is characterised by a multiplicity of providers. In fact, it is providing the health care services of the country's health facilities employ 1.2 crore or 12% technology can be a game-changer for government and research. The existing, under-structured and uncoordinated data could be made to flow in a coherent, at the aggregate level, for equitable health effort and collective breakthroughs in the treatment of diseases, for tobacco, for tobacco, and cancer.

**e** Governance is the application of Information and Communication Technology to promote Health, Social, Affordable, Responsive and Management (SMART) governance according to the Ministry of Health and Information Technology Government of India. The government has launched various health related health services. For instance, the National Health Portal provides a single point of access to health related information for citizens. Secondly, the e-Health Management System

enables the delivery of patient care and diagnostic services. The Aarogya Setu app notifies and alerts patients regarding the services received by them. In Kerala, several health applications have also been launched. For instance, the 24x7 Mission Call Centre is a mobile service for providing treatment and counselling to the patients through the Aarogya Setu app. The Government of Kerala has launched a one-stop platform for emergency and ambulance services between the National Number of emergency and ambulance and one year old. (Tingir, 2019; M. G. Gupta,



application encourage people to use telemedicine.

Numerous piloted have also been initiated by the Government for tracking across delivery. These include the mobile systems for tracking TB patients, the Mamma and Child Tracking System for monitoring pregnant women and children, interactive postnatal app and the Dashman Bharat – Health and Wellness Centre portal for monitoring the delivery of comprehensive primary healthcare services through Health and Wellness centres across the country.

Over the last few years, India has introduced several policy measures to enter in a new era of digital healthcare. Skillware delivery, National Health Policy, 2017, envision a digital health ecosystem and recognise the crucial role of technologies such as artificial intelligence, Internet of Things (IoT), cloud-based and cloud-based systems in the delivery of health services. In 2018, NITI Aayog released a proposal on future health state with the objective of providing a framework for the country's future digital health system.

In the context of the nation's health care infrastructure, the Prime Minister had announced the launch of the National Digital Health Mission (NDHM). The mission aims to create a management framework to govern digital health data and facilitate its seamless exchange across systems of public and private health care service providers, Ministries and departments, and to ensure interoperability, security as well as interoperability for interoperability. The NDHM has the potential to make the health system more efficient, timely, transparent and effective.

It is noteworthy that India's health system is characterised by a multitude of providers. In fact, it is estimated that nearly 88 percent of the country's health facilities employ 20 people or less. There are total three of care in the public sector, including primary health centres, community health centres, health and family welfare centres, district hospitals and state tertiary care centres, among others. Besides, several forms of establishments exist in the private sector, including nursing homes, clinics, corporate hospitals, specialty medical centres, etc.

Given being information intensive, India's health sector has already received considerable impetus to digitisation. With comprehensive digital health made with emerging technology for

enabling a unified information space, these systems do not interact with each other, leading to the formation of multiple disconnected clusters of healthcare information. Moreover, one of the consequences of health provider fragmentation is that patient records are scattered across disparate manual or IT systems with limited or no possibility of interoperability. This is a direct consequence of the lack of shared standards for health monitoring, as well as the absence of a common healthcare taxonomy and consistent data protocols.

Consolidating a single health ID and profile for every citizen, envisaged under the NDHM, can be a great option for optimising health information system. The unique and easy-to-remember health ID can carry details of their health and treatment history. The option can minimise the need for repeat investigations and facilitate more informed decision making by doctors. Digital health records can also enable data sharing at the population level to discover insights which are likely to revolutionise health care for patients.

With a policy perspective, a nationwide electronic health profile can enable monitoring of disease and efficient analysis of patient data, thus enabling faster disease testing. It can also foster geographical concentration and better health monitoring of health, followed by the design of targeted interventions. For instance, in the case of COVID-19, if we have access to comprehensive digital health profiles of a substantial part of the population, it could prove to a great start in identifying people with common risk and implementing preventive health interventions proactively. Further, an effective IT infrastructure linking public and private healthcare establishments, through standardised protocols, will ensure data consistency across systems, eliminate duplication and reduce the reporting burden.

Patients will not only be able to share their health profiles with providers for treatment and monitoring purposes, but also access accurate information about the effectiveness and pricing of services offered by various health facilities, providers and providers themselves. Inclusion of technology in the NDHM's digital health ecosystem places it with doctors and caregivers for collaboration in a world order of care.

For providers, access to the health care system can facilitate the utilization of programs and policy effectiveness, as well as increase innovation. The use of technology like Artificial Intelligence (AI) for automated, aggregated recommendations can pave the way for predicting the likelihood of a patient being sick. Of course, the success of the NPHM will depend greatly on ensuring that its product offering is understood by and useful for its consumers. There is potential for a vast amount of health data to be generated once the device is fully commercialized, and it is vital that there is clarity among stakeholders with respect to why the data is being collected, for whom and what purpose. It will take knowledge and skills of healthcare staff at every level that need to be updated to equip them to function effectively within the new digital health ecosystem.

While the future revolves around health data, it is a good starting point for exploring our progress toward a better health system. This is especially true because our first barrier is a highly ill-defined system. While on the one hand, there is one of the most data-rich systems in the world, fragmentation, duplication, inconsistency and – perhaps most notably – the absence of a systems approach for reliable shared data availability to policymakers, researchers, providers and patients alike. Quarterly, around the launch of the highly ambitious NPHM initiative, not a moment too soon, it is anticipated that our National ID system, an increasingly essential value of over USD 200 billion, can be unlocked for the health sector through a variety of implementation of the future. These major shifts can enable this greatly demand for health systems, especially emerging ones like NCDs, improvement in quality of care provided by digital health (with focus on tele-based or virtual-based healthcare) and streamlining of multi-stakeholder processes and interactions, through use of an integrated health data system. All of these elements together will lead to greater efficiency and savings and ultimately improve health outcomes and productivity.

It is worth here to state that while we will require 2 million doctors by 2030, when efforts are being made to address the shortage of doctors, it is equally critical to enhance their productivity and quality of service delivery. One of the ways in which technology can enable this is by deploying smart in-

ter-organised infrastructure for creating a synthesis of the patient's symptoms and medical history, and consultation with a doctor. Doctors can be trained or instructed to focus on key areas to register patients appropriately within a limited and efficient interaction period. A broad disease-based system can significantly improve doctors in carrying out many of their clinical tasks. This would be especially helpful in handling the unorganized cases. Technology can also facilitate the remote management of vulnerable patients, monitoring of chronic conditions like diabetes as well as proactive identification of health problems. As part of remote patient monitoring, mobile medical devices can be used to track vital. This will not only ensure continuity to primary care in real-time but will also be cost-effective as well as beneficial for treating chronic ailments and providing preventive care.

Another important role that technology can play in the health sector is to improve economic efficiency by strengthening supply chain performance and reducing billing of health providers of care. The medical supply chain, for instance, involves multiple stakeholders including manufacturers, drug purchasing committees or committees, purchasing stores, primary health centres, secondary health centres and sub centres, among others. Currently, there are drug stock outs in several states which in turn leads to many patients going unattended. Similarly, in other places, there is an excess of medicines. Services enabled by software help systems such as stock management and performance by accurately data analysis to track and adjust deliveries in real-time. For buying and supplying health commodities, as well as delivering, collecting medical supplies, digital electronic platforms can enable streamlining of administrative activities to the latest information in the field along with ensuring measures for product quality and proper management.

Lastly, technology can be a game-changer for government and research for better, clear, structured and consistent data available to Administrators at the grassroots level to account resource efforts and strategic investments in the treatment of diseases like tuberculosis and cancer. Integration of various health information systems with standardized data collection formats, interoperability features and secure solutions for

generalised knowledge on essential components of efforts, data will allow us not to allow for more targeted planning of resources, utilisation of resources and monitoring of outcomes. The health equity information services (HEIS) technology is not being fully utilised. Its adoption at scale will require a complete transformation of India's health-care from data-rich to data intelligent, ultimately ensuring equity, access, efficiency and quality of health service delivery. To ensure successful adoption of technology and development of health, the attention needs to be laid to informed content, data privacy and security, digital infrastructure as well as training and digital literate capabilities of all levels of the government system.

With local ownership in the new state and federal states, ensuring wider participatory models are being adopted as a sustainable alternative. In 2020, many hospitals, industries, corporates, and administrations in India adopted telemedicine. A common way to evaluate and track a patient without being exposed to infection, this telemedicine system is expected to significantly rise in the market over the forthcoming years.

The number of telemedicine providers in 2020 was around 100 and million in 2021, it is projected to increase to 120-150 million by 2025, growing at a CAGR of 25 percent during 2020-25.

The Telemedicine Practice Guidelines, with revised parity by Ministry of Health and Family Welfare, last notified in March 2021 to assure the users of virtual care, also help in ensuring compliance under 2017, allowing users virtual therapy for COVID-19 patients. The guidelines provide some safeguards relating to the practitioner's conduct, safety and negligence liability, diagnosis and treatment, informed consent, continuity of care, disaster or emergency, access, service records, privacy and security of the patient records and handling of confidential records, and reimbursement from insurers and other entities. Thus, the guidelines introduced an entire framework of telemedicine including regulatory, practice technology platform and also enable to build pathways to integrate these technology to India's health care.

The guidelines support a 100% Government telemedicine services, e-Sanjivani and

e-Sanjivani COVID, have involved telemedicine communication technologies to provide diagnosis, treatment and management of disease. In early December 2020, over 1 million tele-consultations had taken place through a telemedicine across the country in India. According to data released by Health & Family Welfare Department, over 50 million tele-visits occurred nationwide through telemedicine during a three-month lockdown period in 2020, of which 80 percent were for COVID cases.

A coalition of over 100 healthcare specialists in the private sector came together to launch Samva, a health insurance made in India telemedicine application which aims to deliver equitable and affordable healthcare to all Indians. By using social geographical and remote services, it is a telemedicine platform built with telemedicine principles that comply with the Government's National Digital Health Mission. The application features features, remote consultation, browser registered medical practitioners and growth through multiple modes of video and telephone. It also offers Artificial Intelligence based imaging to determine the care required, ultimately in a digitally guided prescription and treatment addressing with free consultations, search cooperation, access the user, sustainable practices, avoid to diagnose, treatments and operations as well as hospital bed occupancy and resource allocation at a reduced cost.

Inclusion of telemedicine in the health digital care will further help connect patients with doctors and specialists. A low penetration of health digital care, rural and remote areas was noted in India, access to healthcare services for large numbers of people. Telemedicine and e-Health are considered to be potential solutions for addressing this lack of access, on account of the essential healthcare penetration in rural and improve health connectivity. A study conducted conducted by telemedicine can save lives and avoid unnecessary costs.

While most of the services needed during the period were related to COVID-19, the usage of telemedicine services is on the upswing to cover a range of other health problems. In the post-COVID-19 era, efforts are still being made to expand the coverage of telemedicine to rural and remote areas, beyond the urban regions.



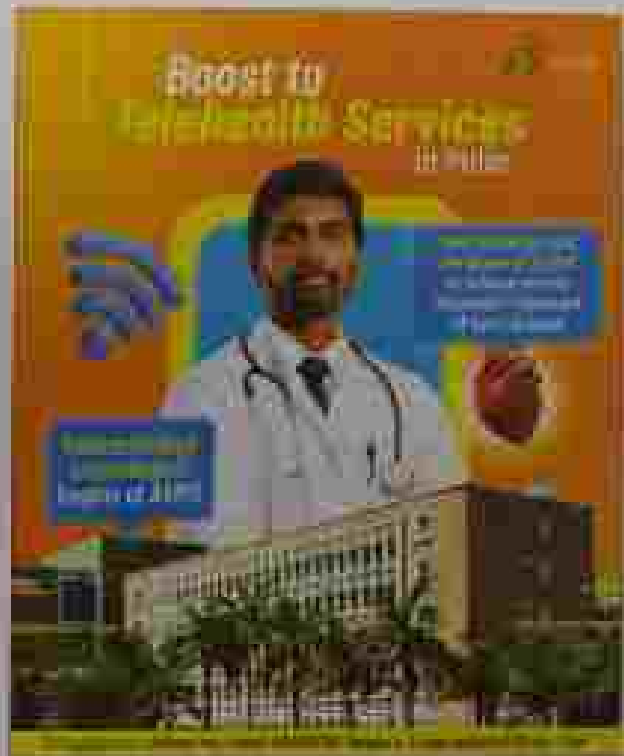
Healthcare is one of the most vital and complex sectors in the world. Digital health solutions have become a key driver in this sector, offering innovative ways to improve patient care, streamline operations, and reduce costs. Many hospitals have adopted the Public-Private Partnership (PPP) model to fund and manage digital health initiatives, ensuring they are aligned with the organization's strategic goals. A successful digital health strategy should also take into account the expertise of healthcare services, operational and quality healthcare can be enabled by Artificial Intelligence, wearables and more, mobile applications or even an Internet of Things. Digital health can improve patient outcomes for people suffering from chronic, complex conditions, because of the possibility of remote monitoring of health signs and delivery of virtual care services through applications and service apps solutions. This, in fact, could prove to be the most viable solution for boosting viability in this.

Since COVID-19, the health care industry has primarily focused on developing wearable sensors, diagnosis and medical devices, digital health, and more, mobile applications or even an Internet of Things. Digital health can improve patient outcomes for people suffering from chronic, complex conditions, because of the possibility of remote monitoring of health signs and delivery of virtual care services through applications and service apps solutions. This, in fact, could prove to be the most viable solution for boosting viability in this.

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Given that India has a shortage of qualified doctors, AI doctors could be a viable solution, especially in rural and remote areas. A leading healthcare provider equipped with a state-of-the-art AI platform covering 120 hospitals,



has already treated over 10 million patients. With a budget of 12,000 crore, the government has brought quality healthcare within the reach of all Indians. By significantly leveraging technology, this model can be replicated in other countries with similar infrastructure. A key challenge is ensuring that the data and health records are protected and monitored by a central authority.

To address these challenges, the Government of India launched the Ayushman Bharat Digital Mission (ABDM) in 2021. This mission aims to create a unified digital health ecosystem across the country. The ABDM includes a central repository of health data, known as the Health Data Exchange (HDX), which will allow healthcare providers to share and access patient data securely. The mission also focuses on creating a digital health ID for every citizen, which will be used to access various digital health services. The government has also launched the Digital Health Authority (DHA) to oversee the implementation of the mission. The DHA is responsible for creating a secure and interoperable digital health ecosystem. The mission has already achieved significant milestones, including the launch of the Health Data Exchange (HDX) and the creation of the Digital Health ID for over 100 million citizens. The mission is expected to revolutionize the Indian healthcare system and improve the overall health of the population.

carry it with them and spread it to anybody whom they meet. Including neighbours in India and overseas.

One of the most significant trends observed during the pandemic is that care is moving towards patients in Tier 2 and Tier 3 cities. Earlier patients from these cities would come to Tier 1 cities for treatment. With COVID-19, this was not possible. What is happening now is that Tier 2 and Tier 3 cities are building capacity to treat patients with diagnosis being done by experts in Tier 1 cities. Much of this is happening through the internet and other modalities, mainly in the form of a consultation and telemedicine. This is the concept of connected care where skills, expertise, knowledge, remote Operating Centers can be available by experts who are not present in the same geographical location.

Another trend being observed as a result of diagnosis during COVID-19 is online training and education of medical professionals. Informing and the use of simulation is far more prevalent and accurate nowadays. New technologies in simulation for hands, feedback are enabling realistic online training. With realistic feedback, learners can get an experience of touch to feel locally, simulate the feel and situations, which would otherwise be experienced by a surrogating surgery.

What is clear from these trends is that we are moving towards the digital transformation of healthcare. We are looking at a future where connected care becomes the norm and patients are no longer constrained by geography when it comes to accessing care. In such a scenario, doctors and hospitals will be well equipped to deliver accurate diagnosis and treatment to patients using the latest technologies.

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# Air Pollution

## Act to protect your health




Do's	Consult Doctor for	Don'ts
<ul style="list-style-type: none"> <li> Wear a mask</li> <li> Avoid direct contact of hands, avoid touching your face</li> <li> Avoid crowded places, shopping malls, office, bus or rail station</li> <li> Avoid outdoor activities, try to exercise and walking at home</li> </ul>	<ul style="list-style-type: none"> <li> Cough</li> <li> Sneezing</li> <li> Sore</li> <li> Headache</li> <li> Fever</li> </ul>	<ul style="list-style-type: none"> <li> Avoid going to school or work</li> <li> Avoid going to crowded places</li> <li> Avoid going to crowded places</li> <li> Avoid going to crowded places</li> <li> Avoid going to crowded places</li> </ul>









# Citizen Participation and Rural Well-being

Dr. Anuja Kumar Meena  
Dr. Deepankar Chakrabarti

Empowering individuals, institutions, organisations and governments together is the key to the success of technology and all the aspects for a government. The collaborative approach of empowering organisations must be citizen participation and ownership of affairs. This will likely reduce farm-to-market chain, resource depletion, and help overall development.

**E**mpowerment of people, groups, and institutions is the cornerstone of all forms of governance and a prerequisite for a nation's overall growth and inclusive development. India is the world's largest democracy, its democratic freedom and expansion lie with citizen participation in every sphere of public policy making. The building blocks of good governance are citizen participation and active involvement, and a government is the visible enactment of good governance. Regarding rural development, it is essential to focus on sustainable systems, considering its challenges in terms of more than 60 percent and about 70 percent of the population residing in rural areas. The rural sector is made of an agrarian economy and provides to the rural livelihood, and hence it deserves better facilities including health, education, drinking water, sanitation, housing, employment opportunities, and an overall better standard of living.

In the recent, the Government of India has taken various initiatives. More recent developments focus on government using digital technology and ICT to contribute, catalyse, and integrate rural development initiatives in meeting the needs of the rural development sector. Several digital initiatives have been taken, including digital first and other ICT application projects to provide public service delivery through improved internet connectivity. The importance of good governance and a sustainable model lies in the growing participation of stakeholders in providing public services, information and communication technology (ICT) and the internet, and to provide greater connectivity. A strategic shift in the e-governance process and multi-stakeholder brings multi-modal improvement in the governance framework.

## e-Governance and Rural Economy

e-Governance is a development through which

public services are made available and accessible to the common man at their doorstep at least through common service delivery centres (CSDCs) through various services offering, transparency and security of affordable price. Government is ICT-Enabled which establishes connection between providers and users of government services in the changing government landscape and digitalisation. An example of this empowerment through e-Governance that is 100% essential for the rural area by providing services including birth and death certificates, land registration, employment opportunities, rural credit facilities, family welfare, primary services, education and technological along with a special effort to improve the information about the sector below the poverty line.



If we accept a parallel shift in the provision of essential public services, moving from a human to a technological interface, some of the popular of initiatives, such as e-governance, e-form, and e-citizen, further more, an initiative like e-District added significant value to the governance process. It is further supported by other initiatives which are contributing significantly to the e-governance process. e-Change, e-Cover, TAMA, e-Trust, e-Health, e-Insurance, e-Infrastructure, e-Healthcare, e-Ration, e-Moov, e-System, e-Service, e-NAM, e-Tax, etc.

The government of India has already launched an extensive program, Mission to square official engagement. It has demonstrated its interest, vision, and plan that involve various entities with the Prime Minister of India. The general idea of this initiative is to participate, judge, and encourage citizens to engage and act. It includes small projects, e-Shiksha, e-Sam, e-Infra, Job Creation, e-Learning, e-Health, e-Insurance, Digital India, e-Saathi Bharat, through which it is expected to bring systematic changes in policy-making through modern processes.

Besides all such efforts and initiatives, the various services up to the village level, sometimes started to meet the needs and expectations of rural citizens, such as health, education, and the e-Covered villages, etc. However, the success of these initiatives depends on the way projects are being delivered in the rural environment. Although India has achieved phenomenal growth in the last few decades in implementing e-governance initiatives, its success depends upon mass participation and their awareness, strong the formulation and implementation of initiatives, e-governance and its success and in improving the quality of public services and others. All the needs to be met through a blend of other services and improvement.

### Dimensions of Rural e-Governance

Rural e-governance is the use of the latest economic development of the rural economy and to also the rural economy. The effectiveness and impact of rural e-governance is measured through various dimensions. The various dimensions of e-governance in the rural sector are: the infrastructure, access to government services, public trust, e-Health, e-Insurance, e-Healthcare, e-Ration, e-Moov, e-System, e-Service, e-NAM, e-Tax, etc.

citizens, e-Healthcare, e-Insurance, e-Healthcare, e-Ration, e-Moov, e-System, e-Service, e-NAM, e-Tax, etc. e-governance, e-Insurance, e-Healthcare, e-Ration, e-Moov, e-System, e-Service, e-NAM, e-Tax, etc. e-governance, e-Insurance, e-Healthcare, e-Ration, e-Moov, e-System, e-Service, e-NAM, e-Tax, etc. e-governance, e-Insurance, e-Healthcare, e-Ration, e-Moov, e-System, e-Service, e-NAM, e-Tax, etc.



Figure 1: Dimensions of Rural e-Governance

### e-Governance and Citizen Participation

The success of any government is based on citizen participation and engagement, such as a variety of diversity in language, culture, employment opportunities, and financial problems which vary from region to region and state to state. So, designing any program should be able to address all the requirements and expectations of people in those areas. Further, to enhance e-governance projects, efficiency, understanding of social-cultural factors, and the way with people's expectations. To ensure a suitable governance address in rural areas, there have been various approaches that are considered during the policy formulation phase. There is a need to design national e-governance policies which are the need of the hour. Further, the effective government e-governance are the needs and expectations of people, such as e-Insurance, e-Healthcare, e-Ration, e-Moov, e-System, e-Service, e-NAM, e-Tax, etc. e-governance, e-Insurance, e-Healthcare, e-Ration, e-Moov, e-System, e-Service, e-NAM, e-Tax, etc. e-governance, e-Insurance, e-Healthcare, e-Ration, e-Moov, e-System, e-Service, e-NAM, e-Tax, etc.

In the process of vision and formulation of programmes, citizen involvement and their feedback are essential. The spirit of 'we the people' is truly reflected in the Preamble, Fundamental Rights and Duties, and the Directive Principles of State Policy through empowering citizens, addressing grievances and ensuring of justice. The ultimate success is achievable only by having them part of citizen government to regulate the matters of sovereignty. All rights and demands of the people will flourish. Citizen awareness and civic engagement are real indicators of growth in strengthening value based participation. Good governance is a value based proposition, helps in removing gaps and differences between governments and citizens. On the other hand, civic engagement processes in which other participants and collaboration among citizens, institutions, communities and governments are essential and begin by shaping public policy process as the window for citizens to participate and take an interest in public affairs and public policy making.

### Citizen Participation and Governance

Citizen participation is essential in all public participating, especially in a government designed for rural areas. Citizen participation by a significant role in shaping and controlling government for good governance, which is the need of the hour.

- a) **Citizen as a customer:** Citizen is considered as a valued customer as public services are meant for public use and consumption. Hence, by a customer citizen participation and their feedback is very essential in designing public services and ensuring quality service delivery of all activities etc.
- b) **Citizen as an owner:** In a democracy, all the citizens are the real owners of public services and even they are considered as investors in public services as they contribute through taxes etc. As an owner, citizen involvement is essential and

needed to get more information about public services and delivery.

- c) **Citizen as a co-producer:** Citizens are often asked to own the role of co-producer in providing public services. Citizens are expected to act as a partner. Hence their involvement and participation will improve the quality and timely delivery of services.
- d) **Citizen as a quality evaluator:** Being the co-producer and consumer, the customer provides the evaluation of the public service quality with their delivery effectiveness. thereby, they can contribute the government in providing better government services and better public services.

### Citizen Participation and Framework

A customer framework should be carefully thought out and planned to ensure meaningful engagement with citizens. An organisation must be able to work with communities and citizens with a suitable feedback mechanism must be in place to share the difficulties and challenges. The key components needed to ensure successful and sustainable citizen involvement in government projects are: need analysis, degree of engagement,



vision of Hagerstrand team, management science, subject of systems, feedback analysis and institutionalisation of engagement.

Spices, urban participation can be viewed from three different perspectives: firstly, at what stage there is a need for participation, secondly at what levels and thirdly, what are the tools through which participation can become more meaningful and effective (Table 2).

Table 1: Nature of Citizen Participation & Engagement.

Stage	Level	Form
Identification of Issues	Individual	Citizen Petition
Analysis of Issues	Community	Community Participation
Policy Formulation	Individual	Petition
Policy Draft	Community	Public Hearing
Implementation	Community	Community Outreach
Feedback	Individual	Citizen Satisfaction
Feedback and Learning	Self-organising management	Self-organising

Source: Derived from various sources of Govt. of Karnataka

To appreciate the value and nature of participation in the governance process, understanding the scope and requirements of people's participation is vital. Table 2 presents a quick overview of the public participation spectrum.

Table 2: Citizen Participation & Engagement Spectrum.

No.	Approach	Tools & Techniques
1	Inform	Mass Media, Print to Public, Open Office, Advisory Board, Newsletter, Open House, Website & Intranet and Open House etc.
2	Consult	Focus Groups, Surveys, Expert Panel, Open House, Open Meeting, Open & Intranet
3	Participate	Open Office, Workshops, Outreach Activity
4	Collaborate	Joint Working, Open Survey, Participatory Planning
5	Empower	Community Groups, Representative Working & Action, Mass Working Parties

Source: Prepared by author, revised 2011/11

Citizen participation in public policy will likely improve the quality of services and delivery mechanisms and will help in maintaining the governance standards. It is evident from various studies and recent literature in public policy that citizen participation and engagement foster maximum governance. Citizen participation helps bring just distribution, working towards to bring higher transparency in managing the process with accountability. The higher the citizen participation, the better is the governance and as a result, the socio-economic outcomes and well-being.

### Benefits of Citizen Participation

A Government is the need of the hour and the hope is providing the basic facilities to the poor sector at low cost and with justice. The benefits of a government can be paraded to the net with the help of people's participation and full empowerment, overall increased accountability and governmental actions, and a sense of collaboration among the citizens and strengthen the public policy process and will set the ground for good governance. Active participation in policy-making will provide many of benefits:

- Citizen participation helps in the smooth formulation and implementation of public policy. It helps in transparency and makes efforts more accountable and responsible.
- Citizen participation in e-governance will enhance the projects efficiency and reduce.
- It develops a sense of belongingness and uphold something. Making the public in creating policy directly linked them to and enabled to solve any problem.
- Participation and contribution of various representatives, individuals, institutions, political parties, and government agencies will bring in the conflicts and contradictions and hold a wider consensus. Finally, it will become more people driven, participative, and meaningful.
- It will bring the parties who were experienced and help in bringing more awareness and positive outcomes.
- It will help in improving the political positions of marginalised and vulnerable groups, there are often regarded as not being the beneficiaries.


- 2. It will test its programme long with sustainable expenditure and delivery-based initiatives.
- 4. It will help in community empowerment, leading to better awareness and greater mobility.

### Way forward

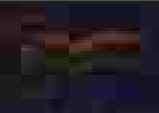
A Government collapse has been designed to have a transformational effect on the digital landscape of providing public services. Their delivery to the public are steadily shifted towards a digital reality, the one enabled by the evolution of government standards. This is helping raise the bar and bring standard of service and bringing the digital world. It is expected that outcomes of e-governance will be achieved through active citizen participation. The vision for e-governance leads into a digitally empowered society and knowledge economy as


an accompanying aim through citizen participation and engagement. (Digital participation) include the participation of citizens in making policies, plans and social participation through deliberative institutions, lobbying, and government response to the key priority of involvement and sets the agenda for e-governance. The collaborative approach of policy making emphasizes more on citizen participation and dependence of actions. This will surely reduce socio-economic, rural, economic deprivation, and help overall development. A variety of models can be delivered in line with with compatibility with all the stakeholders, with maximum citizen participation.

The picture by Shantanu and Divyanshu is based on a sample of Management team. Their Annual or several years' performance is published.



GOVERNMENT OF KARNATAKA  
DEPARTMENT OF AGRICULTURE AND ANIMAL HUSBANDRY  
BANGALORE





# Millet for MoMIs

01. Health benefits of millets and providing nutritional and economic  
 02. With launch of Millet's Week  
 03. Technology transfer  
 04. Millet's impact and growth rate  
 05. Nutritional benefits

# New Age Technology

Harelin Miley  
Cover Feature

Evolution of traditional and technology is intertwined. There is a causal complementarity between good governance and technology. The Union Government explains efforts to link that good governance is not just about the growth and technology. The Union Government explains efforts to link that good governance is not just about the growth and technology. The Union Government explains efforts to link that good governance is not just about the growth and technology. The Union Government explains efforts to link that good governance is not just about the growth and technology.

**M**ore automation and modern day data capture and analytics tools have empowered the governments across the globe with historical, unprocessed and powerful insights to deliver high quality public services and manage them in real-time. India has differentiated itself to emerge as a technology in e-governance and technology has been instrumental in this journey. The e-Governance 2.0 (an e-Governance Ministry) Group of The Common Service Centres (CSCs) or e-Pathshalas are the backbone of e-governance. In the Indian e-governance ecosystem is built on the solid foundation of good governance. At the Digital India program 2015, the motto of governance is institutional while good governance is fundamental. The motto for the foundation of the Indian technological revolution is governance. The motto

captures the foundation of good governance and what do they mean for e-governance with case studies in the form of e-governance. The article also captures the evolution of e-governance in India, its implementation and the integration of new-age technologies in governance and the cabinet file shared by the Government of India.

## Good Governance to E-Governance

As per the second Administrative Reform Commission, good governance aims at providing an environment in which all citizens irrespective of class, caste and gender can develop to their full potential. In addition, good governance also aims at providing public services effectively, efficiently and equitably to the citizens. The 4 pillars which the motto of good governance rests, in essence are: a) transparency (or service to the citizens), b) ethics (honesty,



primary and managerial) (i) *Basic* (making of decisions) (ii) *activity* (by the policy makers) and (iii) *Efficiency* (quality and effective delivery of service without wastefulness).



Figure 1.1: Key activities of e-governance

Over the last 10-15 years, if good governance (literally, the role of the government) has been shifting towards an *e-governance* with the passage of national government and national governments. The Government of India has taken several efforts over the years to strengthen its interface with the government and increase the transparency, efficient, timely and accountable delivery of public services such as healthcare, justice, pension, education, identity cards, ration, land records etc.

Technology in governance is a simple chain of 3 elements: (i) all the principles of good governance - it brings transparency, accountability between government and public, a reduced and less accountable service delivery when being accountable. The World Bank has been at the forefront of pushing the principles of good governance as well as e-governance. In fact, the World Bank's Government refers to the use of government agencies of information technologies such as Wide Area Networks, the Internet, and mobile computing that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can make a world of difference and better delivery of government services to citizens, improved interaction with business and industry, better empowerment through access to information, or more efficient government management. The resulting benefits can be an open economy, improved transparency, greater accountability, revenue growth and in the process.

The *primary* activities concern the internal affairs, while the *secondary* focus of a government on the primary businesses and the transformation in government operations.

### Scope of E-Governance

The scope of the e-governance can be categorized into four government-to-government agencies, government-to-business, government-to-citizen and government-to-employee, as discussed below:

- Government-to-Government (G2G)**  
 E-governance aims to revolutionize the processes within the government as well. By 2008, it was estimated that government-to-government e-governance has led to more than 100,000 transactions being done online. Such transactions include tax filing, payment and bill clearing activities within the public and are a major source of revenue. A simple e-governance process of receiving bills or receipts from a vendor has improved the efficiency of the government. A government used to receive bills and receipts in office to enter but would not find a solution to her problem (preparing which was both a painful and costly process and was delayed by the central treasury, now Office Office). It has reduced the entry movement of the bill, reduced and it also creates a log of bills and how long it takes to process and there is now a government website to have track of transactions and expenditure under various departments. The website has also helped in faster information flow within the department and between various departments and thus making efficiency while creating an audit trail for each part of the department through the use of timestamps, both on and off-line. E-governance has resulted in better working of government offices. Another example is HRD of an Indian (and several) countries which is linked to the salary and performance reports of employees and thus ensuring high performance standards within the employees. Various other measures have been introduced in traditional government practices and the e-governance.

## E-Governance: Ease of Doing Business Case Study

In the World Bank's Doing Business Report of 2014 (DBR 2014), India stood at a grim 142<sup>nd</sup> position amongst 180 countries. In a short span of six years India ranked 53 in the World Bank's Doing Business Report 2020, a historic rise of 78 ranks from 142 in 2014. In addition to heavy regulatory reforms, lots of digital initiatives were also started to improve the experience of businesses in doing business in India. Some of the reforms are:

- Introduction of SPICe and AGILEPRO forms by Ministry of Corporate Affairs (MCA) save time and effort required for a recent Company Incorporation. This form contains various services like PAN/TAN/Director Identification Number (DIN) etc.
- Online Single Window System: An Online Single Window System for all construction permits: Online Building Permission System.
- Fees and other certificates are issued through Online Building Permission System.
- All inspection of various agencies like Fire, Water, Sewerage are carried out jointly on the same day.
- E-Courts Service Portal: Dedicated Commercial Courts have been established in Delhi and Mumbai dealing exclusively with commercial cases. Adoption of technology for case management by lawyers and judicial officers is leading to speedier dispute resolution.

- **Government to Citizens (G2C)** : This is the most widely used e-governance interaction where the government has created an interface with technology between the government and citizens which enables the citizens to smoothly efficient delivery of a large range of public services. Good examples include school fees, benefits of pregnancy schemes, subsidy for electricity, online driving licence, motor vehicle registration directly into the accounts of the beneficiaries, and this eliminating any middle man. The MCA 21 system has further strengthened the public service delivery with digital means.

- **Government to Employee (G2E)** : Government is trying to improve employee and the way organisations. It has to interact with its employees on a regular basis. This interaction is a two-way process between the organisation and the employees. Use of ICT tools helps in building trust, increasing fair and efficient as the employees have more satisfaction level of employees on the job.

- **Government to Business (G2B)** : Government has put many policies and laws and business to make life operations of businesses. Even

before the the policies of liberalisation, privatisation and globalisation, the government approved many processes and policies. As the real change came with the IT boom. The government implemented many e-governance initiatives in 1999, the Codes of Business and allow them to travel fast and add value to the economy and create jobs. But in the year 2000, the Prime Minister G2B has given mandate and India has consistently improved its digital ranking in Ease of Doing Business. A major reason for such a transformation is e-governance.

### Government Initiatives and Roadmap for e-Governance

The e-governance agenda of the government got momentum after the formation of the National E-governance Plan by the Government of India. The Government approved the National e-governance Plan (NEGP) comprising of 27 Mission Mode Projects and 2 components, on May 31, 2006, in order to promote e-governance in a targeted manner, several pilot projects and projects have been undertaken for various core and support infrastructure. The major pilot e-governance components are listed below.





other CEOs. They will also Network (NCA), Common Services Centre (CSC) and through government e National e-Governance Service Delivery Gateway (NSDG), State e-Governance Service Delivery Gateway (SNDG) and India e-Governance Service Delivery Gateway (ISDG). The internet support components include Core policies and guidelines on Security, HR, Ethics, Employment, Social Media as well as Training, related to Microsoft, International Enterprise Architecture, Information Security etc.

With their initiative to put the backbone of the nation on Experience, the first step came with the launch of Digital India Mission in 2015. Comprising 100 departments of various ministries. This included lack of integration amongst Government departments and ministries, low degree of government process transparency, steps for bringing emerging technologies like mobile and cloud etc. The Government of India launched several programs in 2015 with the aim of "transforming Governance to Transforming Government". The number of Mobile Vaid Projects has increased from 11 to 25 MPAs. Many new social sector projects namely women and Child Development, Social Security, Financial Inclusion, Urban Livelihood etc., have been added in the MDP under e-NAM. Third area of effort will be Digital India.

- **Technology for Education - e-Education:** All efforts will be directed to transform the learning process and quality of education. Secondary school learning will be made digital through e-content & programs on digital literacy will be taken up at the national level. Massive Online Open Course (MOOC) will be developed and provided for all students.
- **Technology for Health - e-Healthcare:**

• **Healthcare:** After some time health care will be available through mobile devices, more medical help and data integration of services, etc.

- **Technology for Farmers:** This would enable farmers to get real-time price information, collection of crops and sales with bank and retail payments with mobile banking.
- **Technology for Banking:** Mobile based emergency services and disaster relief information provided to users, as a mobile bank so as to take the quick money transfer with it from bank accounts and in rural and countries.



- **Technology for Financial Inclusion:** Financial inclusion will be improved and mobile banking, Micro, Small and Medium Enterprises (MSME) and Post Office.
- **Technology for Justice:** e-Courts, e-Procurement, e-Tendering System will be strengthened by integrating virtual courts, e-filing, e-appeals, e-objections.
- **Technology for Banking - National Int. Mobile Money Project:** will be implemented to

enable us to send money using the phone, getting, investments, etc. and deposits.

- **Technology for Cyber Security:** National Cyber Security Co-ordination Centre would be set up to monitor and respond to cyber threats.

**New Age Analytics: AI and Machine Learning in E-Governance**

The Government is working on various new technologies. Many start-ups have been raised under the department which are

powered by wireless and fibre optic lines data on every government scheme, present competitive outcomes, targets and delivery. And, all these data points are used in the public domain for public scrutiny. As a result it gives power to the hands of the citizen to hold the government accountable. For instance, the Champion of Change Dashboard developed by NITI Aayog (case ID: 112) AgriBioshield Initiative in India assesses several developmental schemes (Rashtriya Mithun, AgriBioshield, Milk, Wood, Fisheries, etc.) based on the performance of their officers. The officers are ranked. This digital ranking of the officers is visible to all. The Chief Minister, Government of Madhya Pradesh and the District Collector, as well as the district officers and the respective police, are informed regarding the specific officials to take the necessary compliance and the necessary police service delivery.

Similarly, NITI Aayog is working in the field of real-time and transparent monitoring for providing resources to colleges and universities. For this, NITI Aayog, the Ministry of Education, Council of Technical Education (CITE) has created a central time series dashboard based on various parameters along providing a detailed and time-saving. These 2,000+ data points and parameters (because of 100+ new types of institutions). Hence, the use of computer and internet between central officials and local institutions have been facilitated. Such the advent of the technology with experience will further increase and become successful. And, over time, this dashboard will be rolled out for first to ensure that the additional resources available are properly distributed to the user.

Another key initiative of the education sector is the digital platform built by the Government of India for career guidance through having a central database and app. These platforms are built using the power of artificial intelligence. They recommend courses to the student based on the interest and working knowledge and skills of the student. It also provides about 100,000+ courses to the student's interest and performance by having the student's academic standing, comparison with peers, performance of their school/colleges. The Government of Andhra Pradesh is collaborating with Microsoft for applying a combination of artificial intelligence and machine learning to combat the problem of dropouts in schools. The approach

helps in identifying students with a high likelihood of dropping out and immediate interventions in the form of motivational support, counselling, support, support, etc. are offered to stop the drop-outs.

Other technologies such as Blockchain are being increasingly adopted in the states of Karnataka and Tamil Nadu for digitally authenticating land records and contractual documents and other documents with collaboration between field officials and advertising leading to long-term sales and disputes. Blockchain technology solves this problem easily. Blockchain is showing immense scope for facilitating the problem of recording transactions. And, tracking assets in a distributed network. An example cited by NITI Aayog (case ID: 104) is digital Copyrights, patents, copyrights, trademark, BRIS. The logic is, because there are no changes of digital records and the records are all available any

The National Innovation Centre, Government of India has set up Centre of Excellence (CoE) in Blockchain Technology with an objective to promote India and further rapid adoption & onboarding of blockchain based systems. The CoE will foster stronger collaboration between the government, public and private sectors to ensure that the next generation of jobs and investments are available to our citizens through digitalisation of government.

### Conclusion

The digital India, Mobile Connect, digital HR, growing presence of India's digital citizenship and the future that it holds for a government with high speed and low corruption (Digital India, for the common systems and services) will become a reality and give it a new set of tools. These tools will facilitate the citizens to do an online, self-sufficient work and making buildings/facilities smart systems. (Continuously) It is an efficient and it will use the new innovative technologies. High speed, self-sufficient, better economy, and services to citizens and businesses. All this will be possible only if we can place smart governance principles in these technologies ensuring that they are efficient, accessible and fair. With such tools, a nation will surely become a major force to reckon with in global arena for its development.

(Dr. Anand Kumar, Deputy Director, NITI Aayog and former Sr. Associate, NITI Aayog, views expressed are personal. Email: anandkumar@niti.gov.in)



## E-Governance in Tourism

Dr. Anurag Kumar

The application of Information Communication Technologies for governance is spread across the various parts of a Government. This section will focus upon various aspects of the tourism sector to look upon utilization of e-Governance as one of the ways for the growth of the sector. One of the primary concerns of tourist destinations that have tourist agencies is getting connected by IT technologies like, Internet, The Global NCATS, SMART cities, e-Visas, SMART cities etc. Availability of facilities is facilitated by a B2A approach of e-Governance sector of India. SMART implementation has been made for various services, which bring about investment in roads, ICTC has been a pioneer in e-Governance in the sector of travel arrangements. National level initiatives like National e-Governance Programme have played a significant role in e-Governance by use of ICT.

**A**pplication of ICT in e-Governance and communication technology in information exchange to provide government services in the tourism sector can be undertaken by e-Governance. The use of e-Governance offers the following three advantages in providing e-Governance services: (a) Government to Citizens, (b) Government to Business, (c) Government to Government, and (d) Government to Employees. An online system can become a fully developed system. It would include providing various services of technology in all areas of economy. Digital India aims to empower citizens, expand services with much ease

and to conveniently interact with the government. E-Governance is about maintaining government customers to fulfil their needs, automated and efficient. E-Governance is expected to maintain sector confidence by ensuring responsiveness of public service delivery processes and by supporting citizen participation in government.

Research conducted by the World Travel and Tourism Council (WTTC) has revealed the impact and tourism sector's contribution to the Indian economy. India's tourism sector is expected to reach US\$ 150 billion by the end of 2022. The forecast from WTTC's latest economic impact report shows the sector's contribution to the Indian economy's value added would reach US\$ 11.6



between 2012-13 period above 2010 levels. The research forecasted that the outlook for the next decade is moving very positive with India emerging as one of the 10 of all new BRIC and top 100 jobs globally. There is a very strong movement from one place to another. It is all spread throughout being produced right from the farm, when early harvest is in effect, it will be a good move. Government has been supporting the progress of tourism being, as it for long will be a leader.

Tourism is considered a new concept which has been introduced in India. It is an economic movement. Last few years, different of tourism were being introduced by the government of various states. According to the addition of tourism given by United Nations World Tourism Organization, tourism is an act of visiting from a place of residence or business, where the individual experiencing this journey should stay at least 24 hours at the destination and should not stay more than 90 days at the destination. This journey can be done for a variety of purposes. During this period, the person should not be involved in remunerative work.

Tourism begins with the attraction which simply can be anything. The primary purpose is visit a particular destination. Once an attraction is decided, immediately comes the return where a mode of transportation has to be chosen to reach the attraction. Once a tourist decides to visit is an important milestone to qualify a journey for tourism. It includes interactive and hospitality rooms which provided the accommodation when an individual stays at the destination. It has to be understood that tourism infrastructure is the spine which facilitates the growth of tourism. Once an individual decides to undertake tourism, accommodation is the most critical service. Tourism is a multi-faceted task. There are an array based directly or indirectly. The provision of good services will not be possible unless certain basic facilities are provided by the government which are a must for international tourism.

The world is not fully open completely exposed to various economic activities. There are restrictions and many dependencies when visitors of a particular area arrive in a country. The things which are of economic nature are a guarantee.

## Attraction

Tourism destination Attraction of Muzir are other cultural heritage and attractions (Tejwade) is a cultural attraction located in the destination Agril. Prof. Atkinson, a prominent scholar of tourism, is a founder of a book Office Operator in Tourism, mentions that, every place is required of tourism that it should encourage to the quality of life of the host community, a proposition which is strongly developed into a conference link, *Of New Products for a Better Future's year* (Singh 2012). It is important to mention that, in terms of destination development, from the point of view of tourism growth, connecting the tourism resources into tourism products becomes very critical. Governments can help in the transformation of a destination, the condition of socially improve that it turns benefits the tourism interests of this destination.

Tourism e-Governance Bill 2010, enacted in 2010, aimed at a framework where all secondary and higher secondary schools were to be connected to broadband and Massive Online Open Course (MOOC) were introduced for leveraging e-Education. Another provision was to be strengthened with the use of mobile banking, front-ARM program etc. a Course e-Police e-calls and e-Infrastructure were aimed at improving the judicial ecosystem. Another ICT usage policy under a Government initiative that aimed the flexibility collection of destination across India are, a program which is an online registration framework allied to facilities. The benefits to take online OTC appointments with Government facilities.

MOOCs aim to deliver education services to the long-term residents under the Curriculum Act. It may facilitate individual use in the tourism sector. Another is a special initiative which aimed to create digital products under a program to make citizens in security cases and secure their documents with service providers, who can directly access them electronically. Another one deployed will be used as a digital map of the administrative of Muzir. Voluntary Above is a program which is aimed to create a network of tourism in destination. It will be used as a digital map of the administrative of Muzir. Voluntary Above is a program which is aimed to create a network of tourism in destination.

A number of such sites in which the tourism is not only a part of a multi-act of companies.

opportunities for further, where that, as stated, system is an action plan intended to make 10000 jobs within and the job market for businesses and other transformation (activity) and the future systems of Government of Intelligent India will be systemwide, integrated in foreign way from the computer, information system, Global Positioning System and Remote Sensing for program, planning and analysis. This will be the implementation of smart cities mission and smart villages. Scheme on smart health (national health plan for multi-modal connectivity aimed at coordination, planning and execution of infrastructure projects including smart villages with smart rural digital technology.

### Accessibility

The way that airports and airports have played in opening up the destination has been through, with speed of travel being without lagged with accuracy in a 2018. International Air Transport Association report on Indian aviation in 2016, 78 million people travelled to, from the within India. In 2017 that doubled to 154 million. That number is expected to double to 320 million by 2027. Aviation in India supports 7.5 million jobs (directly and indirect). Aviation contributes some US\$30 billion annually to India's GDP. The report further stresses upon continued investment in the case of better infrastructure for sustainable growth of aviation. Government's attention to the system will be the key to the industry.

In the year 2021, the Ministry of Civil Aviation, Gov. launched a-GCA as a Government for the citizens, with an aim of bringing about ease of doing business, enhance transparency and accountability of the processes and functions, take out another chapter in India's Gov. DGCA Directorate General of Civil Aviation is the regulatory authority, licensed to enhance operational efficiency, improve regulatory reporting and increase productivity. The a-GCA system has been implemented with Tata Consultancy Services as service provider and Airside Alliance Cooper Pvt. Ltd. as project management consultant.

The project aims at automation of the processes and functions of DGCA. The results provided by various DGCA stakeholders such as pilots, airport management agencies, air traffic controllers, air operators, airport operators, flight training

organisations, international airlines organisations, etc. will be made available to the a-GCA system. The application would involve AI to guide the various services and validate their compliance status. The application would be governed by DGCA officials, and operators and airlines would be using various

### Supportive Infrastructure

Infrastructure is an umbrella term that covers all the structural elements constituting the framework on which different systems can take place. It includes transport platforms such as roads, railways, air, airports, etc. as well as utility systems such as water and electricity provision, sewage systems etc. Infrastructure can be of dual use, but in some instances it is designed primarily for revenue, and climate and (around 2007) infrastructure is called to road infrastructure in the context. Roads provide the wide connectivity in the field of business. They connect the other modes of transport, in order to decrease the costs of mobility and also to enable more digital transactions in the country. Making India a Government's awarded award 2018. It is a revolution in the digital systems, reduction of cost without having to pay for carrying out the full transaction. From now, the way will make business transactions effortless and it will be the backbone of the system. This mechanism facilitates the business process in such a manner.

### Travel Intermediation

Financial cost of a commercial is up to 20% of the fares (transport/transport) and utility (ground service providers like airline companies, hotels, railways, etc.) together for travel and tourism, intermediation covers about 10% through the operators who provide the connectivity of the tourist (the destination, transport, activities and entertainment) with a low average cost rate through travel agents, who deal directly with the public (Foster et al., 2014), intermediation as a regulatory distributed network.

Though the failure to make a railway NRE in India by using the existing routes in terms of passenger train today, since year 2018 following the failure, the Ministry of Railways, Gov. decided to carry a project named IRCT (Indian Railway Catering and Tourism Corporation Ltd.) which multiple channels included establishing an IR-enabled ecosystem



to book railway tickets. The development can be traced all the way back to the pioneering introduction of e-Governance by the Government related to the field of travel and tourism. Over a period of time, the focus of services offered by IRCTC has expanded considerably to cover all aspects of Indian Railways, that offer tourist related products/services, the best bargains in various destinations, best to recreational travel and games.

A quality of information in the tourism sector of India has already comprised IIT, India Air, India, Yatra.com, Thomas Cook and various PCTC, which is a public sector undertaking (PSU) that operates as a travel and tourism e-commerce. In case of its competitor, IRCTC is a less costly Company (Incorporated in 2004) PSU which is wholly owned by and is under the administrative control of the Ministry of Railways. The firm currently operates a 24-hour, 7-days-a-week, round the clock, online, catering, booking, ticketing, travel and more and more. IRCTC has a primary role in providing tickets for the Railways which accounts for a major chunk of its profits.

According to the website given by Ministry of Tourism, the Online Travel Agency is an intermediary/agent, selling travel products and services such as air tickets, the cruise, coach tickets, hotels, accommodations, insurance, packages etc. to a host of suppliers using various digital medium. Comprehensive services are being

streamlined that focus on real time under the name of IRCTC (national railway) and makes sure that such facility made available to the passenger through various variety of technology on the Indian Railways network. Following IRCTC of Indian Railways are a part of its digital ecosystem which includes e-Governance.

1. **CRIS La Centre for Railway Information Systems** It provides and manages the information technology applications of the Indian Railways. National Train Inquiry System (NTIS) was developed by CRIS that provides real-time accurate train running information about train movement in real-time and the arrival at the stations.

2. **RailTel RailTel Corporation** is ICT infrastructure provider and one of the largest national telecom infrastructure providers in the country, owning a pan-India radio fibre network to facilitate part of wire (PDR) India railway track in the year 2011. Prime Minister WiFi Super Network (PM-WAN) scheme has been launched by RailTel through which access to RailTel's fibre optic/WIFI services can be provided in 100 select railway stations across the country.

### Travel Documentation

As per the data of the Ministry of Tourism, on India tourism 2021] share of India in international tourist arrivals stood at a meagre 1.57 percent. The pre-pandemic period of India's tourism of world tourism arrivals stood at 20% percent. Countries like Canada, the USA, Japan, India, which are in the way parallel to the vast riches of tourism resources in India like Thailand, Malaysia etc., feature above India in the international tourist arrival rankings. These figures stand that as a country we need to work actively hard to increase the national tourism numbers in India. This becomes even more imperative as global tourism has IRCTC as foreign exchange, which led to a decline in the IRCTC's a variety of growth from The launch of Lufthansa Cruise and the use of several low costed tourist agencies in the 1990s that to build confidence in an important tourism development to emphasize upon the need to increase tourism in the GDP of a country.

Following the national tourism numbers it shows that India stands. Out of the various ways that are available in the process of national tourism

Creating an e-Service for the Indian citizens, the act is a milestone for prospective foreign tourists who will be a destination. The India e-Visa is an electronic authorization to travel in India for various categories such as Business, conference, medical, and medical attendant. Under this mechanism, a tourist can apply online, four days prior to travel from their home country without using the Indian Mission, and also pay the visa fee online. After the details are verified, an email or electronic Travel Authorization (ETA) is provided, which is to be presented at the immigration check post on arrival. Entry through airport is allowed only at 28 designated international airports and 5 cruise seaports in India. ETA is an e-Governance initiative introduced by the Govt in 2014. The facility was expanded in 2017-2018, in the 2018-2019 Budget. The TVDA scheme was started for Japan, Singapore, Finland, Luxembourg and New Zealand. The government integrate TVDA with ETA, thereby making the e-visa

The Ministry of External Affairs (MEA), New Delhi, signed an agreement for second phase of the Passport Visa Programme (PVP) with Tata Consultancy Services Limited, appointing them as the Service Provider for the project. The PVP V2.0 is a continuation and enhancement of PVP V1.0, an e-Governance programme, which introduced unprecedented transformation in delivery of passport visa services to citizens. The service is broadly described as more accessible and reliable passport services by citizens in a hassle-free environment through online application and a convenient, trusted and regulated workflow. The number of quality service offices has increased across the country. MEA is working towards opening of a new Centre in every 100 km radius constituency across India. It is by Passport Visa Kendra (PVK) or Post Office Passport Visa Kendra (POPVK) as per current data. 38 PVKs, 425 POPVKs and 65 Passport offices are operational. The programme

has already been extended to more than 100 Indian Missions/Post Offices across 2 countries like Singapore (SPPS), resulting in more than 100 million visits to Indian Missions.

### Conclusion

The administrative profile of visa and the geographical diversity makes the application of e-Visa more and more important to improve efficiency and for overall economic development. India is characterized with the availability of internet day at night of the Government in the entire world and hence for most citizens to start obtaining an e-Visa through e-Service. Advantages of e-Governance from an online perspective include effectiveness in governance as it will be done by date, it will also help in reducing the cost that government incur in buying stationary and it will make the functioning of the government transparent. This system will make the government officials more accountable for the work.

Challenges associated with implementation of e-Visa include linguistic diversity of the country that is when an effective outcome, e-Governance initiatives need to be implemented in local language. Integration of e-Governance services of the central and various state governments was made as to launch a big chunk of online application. It will digitally divide and local technical problems, the